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ABSTRACT

This feasibility report reflects the increasing demand for program accountability at the graduate level. The information presented is related to decision-making by policy makers and prospective graduate students. Included are the measurement instruments which were developed to sample 24 doctoral programs in chemistry and psychology and 25 in history. The study concentrates on quantifiable measures of both qualitative and quantitative aspects of the programs. The study begins with a presentation of the program characteristics which were judged important to quality of doctoral programs. The first few chapters cover background and purpose of the study, the study procedures and program purposes. Each remaining chapter focuses on data analyses and conclusions related to ratings of departments as measures of program quality, faculty training and performance, student abilities and achievement, quality of resources and environment, program contents and procedures in each department, and alumni accomplishments and opinions. An appendix divided into seven sections presents: (1) communications with participating universities; (2) institutions which participated; (3) Deans' ratings of program characteristics; (4) copies of the various questionnaires used; (5) characteristics of programs and questionnaire respondents; (6) scales formed from individual questionnaire items; and (7) examples of feedback reports to individual programs. (SA)

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Assessing Dimensions of Quality in Doctoral Education: A Technical Report of a National Study in Three Fields

Mary Jo Clark
Rodney T. Hartnett
Leonard L. Baird

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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A Technical Report of a National Study in Three Fields

Mary Jo Clark

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This report is based on more than two years of research effort, beginning with discussions with members of the graduate school community about the meaning of quality and continuing through activities such as the development of questionnaires, the selection of samples, managing the logistics of gathering the necessary data, interviews with department chairmen and graduate deans, analyzing and interpreting the data, and preparing this final report. Needless to say, the successful completion of any project of this magnitude depends a great deal on the encouragement, support, advice, and cooperation of many different people in many different roles. We would like to acknowledge the assistance of some of these groups and individuals here, recognizing that in doing so we run the risk of omitting still others who were instrumental in carrying out the project.

First, we would like to express our appreciation to the thousands of students and faculty members in the 73 departments who took part in the study for their time and cooperation in providing us with rather detailed information about their departments and their own experiences there. Without their help, this report--and more important, whatever impact this report might have on doctoral program assessment--very obviously would not have been possible. To express our thanks to them on this page of a technical report is not very satisfying to us nor a fair recompense to them, for, to be realistic, only a small percentage of them will ever read these words.

But our appreciation for their help is no less because of this admittedly feeble means of expressing it.

Twenty-five universities were included in this study. In addition to the responsiveness of the students and faculty in these institutions, the important liaison work of the 25 graduate deans and 73 department chairpersons was essential to the collection of reliable doctoral program information. We thank them for it, and hope that they feel that their original endorsement of the study and subsequent help in its conduct were worthwhile.

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Chapter 1

BACKGROUND AND PURPOSES OF THE STUDY

American universities are under growing pressure to evaluate and even to justify the continued existence of their doctoral programs. These pressures are generated, principally, by concerns about persistent financial shortages and apparent degree overproduction as well as by the increasing authority of state educational coordinating boards and other external agencies. Institutions and states are looking for fair and dependable ways to evaluate graduate programs in order to use their resources most productively; departments want information that will help them adapt programs to changing needs; prospective students need more information about the characteristics and emphases of specific programs for improved attendance decisions. All of these groups are concerned about whether or not the quality of doctoral programs will be maintained in the face of these pressures.

The project on the Dimensions of Quality in Doctoral Education is a response to these needs and concerns. It developed from the premise that the many aspects of doctoral programs that contribute to educational excellence are represented only partially and imperfectly by any single rating or index of program quality. The primary goal of the study was to describe programs in ways that would encourage and support their individual excellence and at the same time improve the information available for decisions by policy makers and prospective students. In order to accomplish this goal it was necessary to identify the program characteristics most closely associated with judgments about educational quality, to develop reliable measures of these characteristics, and to select a manageable number of them for profiles of the ways in which one program compares with others in the same discipline. This report describes such activities.

Background

This study of multiple criteria of program excellence grew out of concern among a number of graduate school deans about the limitations of reputational ratings as the only widely acknowledged indicator of doctoral program quality. Ratings of the reputation of a program among faculty members or other professionals in the same field have a place in program evaluation; but they are not very helpful to those who may be seeking to improve their programs, are highly related to program size and visibility, and only occasionally reflect recent changes (either good or bad) in a program. Many activities contribute to program excellence; therefore, multiple criteria are needed to judge the level of a program's achievement.

Interest in ways to measure and to evaluate many of the different program characteristics that are associated with educational excellence also reflects an increasing demand for program accountability. Particularly at the graduate level, state agencies and national councils, as well as individual institutions, are calling for program reviews that consider mission, need, cost, and productivity as well as quality (e.g., Fleming, 1973; Education Commission of the States, 1975; National Board on Graduate Education, 1975). The importance of quality is emphasized in the rhetoric; but the review procedures that are described or suggested almost always concentrate on easily available quantitative measures such as number of students, number of degrees granted, or national reputational rating in the field, rather than attempt to come to grips with what "quality" really means in graduate education, or with some of the ways in which it might be evaluated.

The major effort to evaluate the quality of doctoral programs in recent years has been the collection of prestige or reputational ratings by the American Council on Education in 1964 and 1969 (Cartter, 1966; Roose & Andersen, 1970). In addition to direct use by the higher education community, these ratings have been used as criterion measures in several efforts to evaluate selected characteristics of Ph.D. programs (e.g., Drew, 1975; Elton & Rogers, 1971; Elton & Rose, 1972; Hagstrom, 1971; National Science Board, 1969; Powel and Lamson, 1972) and to select graduate programs of varying quality for more intensive study (e.g., Dressel, Johnson, & Marcus, 1970; Heiss, 1970). These studies, and others, identified a number of structural program characteristics associated with the reputational ratings, falling generally into five categories: (1) selectivity (e.g., number of student national fellowship holders, number of students from highly selective undergraduate colleges, number of faculty with Ph.D.'s from high-prestige programs); (2) size and resources (e.g., number of students, number of faculty members, average faculty compensation, amount of financial support to students); (3) program emphasis (e.g., number of doctoral degrees awarded in relation to number of baccalaureate degrees awarded, part-time vs. full-time students, priorities among teaching/research/service); (4) productivity (e.g., number of degrees granted, faculty publications, elapsed time to the degree); and (5) self-evaluations (e.g., morale, satisfaction, peer appraisal). Only the larger studies by Dressel, et al., and Heiss, in which selected programs were visited and studied in some depth, made any attempt to relate program processes to quality by including observational and survey information.

More recently, a number of checklists for the assessment of academic quality or the internal review of graduate programs have been drawn up (e.g., Balderston, 1974; Council of Graduate Schools Task Force on Internal Review of Graduate Programs, 1974; McMichael, 1973). These also tend to emphasize the input quality of students and faculty members, the research productivity of the faculty, the degree productivity of students, and physical facilities and other resources, though there is somewhat more attention to the educational process than in the research studies. Taken together, however, the literature suggests a bewildering array of graduate program characteristics that one might investigate in relation to educational quality, but provides very little guidance about the relative importance of the various characteristics. The literature also tends to suggest ways of measuring only the most obvious structural elements, such as size and degree productivity.

This was the situation in the spring of 1973 when the Graduate Record Examinations Board commissioned a small-scale survey of graduate deans in order to identify a manageable list of program characteristics that were most important to educational quality and some acceptable ways of measuring them (Clark, 1973). Sixty panel members were selected to represent a cross section of Ph.D.-granting universities according to geographic location, prestige, size, and control. The study was designed to provide four kinds of information:

1. the extent of agreement among graduate deans about Ph.D. program characteristics most important to judgments about quality;
2. variations in the importance of characteristics depending upon the major purpose of a Ph.D. program;
3. the judged adequacy or acceptability of possible measures for each characteristic; and
4. the current availability of various kinds of information.

It was thought that the deans' responses to these questions would be of immediate interest to members of the graduate school community, and that they also would help to specify areas for primary attention in later research.

The lists of program characteristics and possible measures that were submitted to the deans were compiled from all possible sources, including the research literature, task force reports, individual university materials and reports, and consultation with experts in the field of graduate education. A very high response rate on two questionnaires (80% to 90%) in a brief time attested to the interest of these graduate deans in the topic of quality.

On the basis of the deans' ratings, the number of possible program characteristics important to judgments about educational quality was reduced by a third, from 63 to 42 items, arranged under the general headings of faculty members, students, program resources, and program operation. A total of 290 possible measures were then proposed for the 42 "important" or "very important" characteristics. Ratings by the deans reduced this number by more than half, leaving 133 possible measures rated "good" or "very good" as indicators of the quality of the most important program characteristics.

A review of the acceptable indicators suggested at least seven potential sources of information important to judgments about educational quality. About a third of the endorsed measures were in the form of statistical and financial information from program and institutional records. Other desirable sources of information included faculty members, students, recent alumni, program chairmen and deans, employers of graduates, and visiting teams of experts. Panel members often endorsed more than one source for a given item of information.

This summary list of important program characteristics and their acceptable indicators was then reviewed by the steering committee that supervised the panel survey[1] and others to eliminate characteristics or measures which, although desirable, might be too expensive, too unreliable, or in other ways particularly difficult to obtain. For instance, though ratings by visiting panels of experts were highly endorsed by the deans for many characteristics, the reviewers elected to eliminate this source of information from the next effort (the research summarized in this report) because of the high cost of obtaining reliable information from visiting teams for a number of programs in a short time. Similarly, information from the employers of alumni was recognized as desirable but impractical for any large-scale study.[2] This review procedure resulted in a refined list of 30 program characteristics that graduate deans thought were closely related to educational quality and that appeared to be amenable to measurement. These characteristics are listed in Table 1.1, together with one or more endorsed sources of information for each.

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[1] Eight graduate deans appointed by the Graduate Record Examinations Board and by the Council of Graduate Schools. Appointed by GREB were William Burke, Arizona State University; Bernard Harleston, Tufts University; Robert MacFarland, University of Missouri at Rolla; and Donald Taylor, Yale University. Members appointed by CGS included Mary Evelyn Huey, Texas Woman's University; Philip Kubzansky, Boston University; Charles Lester, Emory University; and Joseph McCarthy, University of Washington. Michael Pelczar, University of Maryland and chairman of the GREB, and J. Boyd Page, President of CGS, were ex officio members of the committee.

[2] Both of these sources of information may, of course, available and valuable as parts of individual program evaluations.

Table 1.1

Program Characteristics Judged Important to Quality and Some Acceptable Sources of Information About Them

	Sources of Information			
Characteristics	Records	Faculty Ques.	Student Ques.	Alumni Ques.
FACULTY				
1. Academic training	X			
2. Research activity	X	X		
3. Research productivity		X		
4. Teaching effectiveness			X	X
5. Concern for student development and welfare			X	X
6. Involvement in program affairs		X		
7. Group morale or esprit		X		
STUDENTS				
8. Academic ability at entrance	X		X	
9. Achievements/knowledge/skills at time of degree completion	X			
10. Professional accomplishments of graduates				X
11. Judgments about program quality			X	X
12. Satisfactions with various aspects of program			X	X
13. Group morale or esprit			X	
RESOURCES				
14. Financial support--internal and external (including education and general, financial aid for students, research)	X			
15. Library		X		
16. Laboratory equipment and facilities		X		
17. Computer facilities		X		
OPERATIONS				
18. Purposes of the program	X	X		
19. Course and program offerings		X	X	X
20. Admissions policies	X			
21. Faculty welfare	X	X		
22. Evaluation of student progress			X	X
23. Program leadership and decision-making		X		
24. Job placement of graduates	X			
25. Advisement of students			X	X
26. Student-faculty interaction			X	X
27. Internships, assistantships and other opportunities for relevant student experiences	X		X	X
28. Degree requirements	X		X	X
29. Relationships with cognate programs		X	X	X
30. Efficiency of degree production	X			

characteristic. More detailed information about the deans' ratings of the characteristics and measures can be found in Appendix C.

Purposes of the Research

The major purpose of the research project that is described in this report was to gain a better understanding of doctoral program educational quality by developing and field testing measures for important quality-related program characteristics. The study concentrated on questionnaire data from program participants--students, faculty, and recent alumni--and information from departmental records, since these sources were endorsed by the expert panel and were also readily accessible. The study was exploratory in nature. It was limited to doctoral programs in one discipline from each of the areas of natural science (chemistry), social science (psychology), and humanities (history). It also made an effort to consider program evaluation in the context of such differing program purposes as the preparation of scholarly researchers, college teachers, and other professional practitioners.

Three more specific sets of research questions guided the design and conduct of the study:

1. Can reliable data concerning important program characteristics be obtained in forms that are consistent from program to program? What kinds of information are most accessible, and what kinds are hard to obtain? The basic issue here is one of measurement feasibility and reliability, with emphasis on program indicators that are already available or obtainable without the use of site visits, visiting teams, or interviews.

An evaluation of consistency is important because it is essential to the comparison of the characteristics of one program with the characteristics of others, either within the same discipline across universities or across disciplines within the same university.

2. Are some program characteristics important in judging quality only in certain disciplines? Even though the same measures can be used in different disciplines, do patterns of response differ by discipline? Do the interrelationships among indicators vary by discipline? The primary research interest here is one of generalizability. If measures appear to operate similarly in fields as diverse as chemistry, history, and psychology, then there is reason to believe that they would operate similarly in doctoral programs in a variety of other fields as well. On the other hand, measures that appear to work quite differently in these three disciplines may need to be tried out in other fields before the generalizability of their use can be estimated.

3. Can measures of quality-related program characteristics contribute to the improvement of individual programs? Can they contribute to improvements in university- and state-level systems of program review? Can they improve the information available to prospective graduate students? Primary concerns here are data validity, and the uses that are made of program descriptors when they are available to

program managers and higher-education decision makers. Some of the research efforts, such as analyses to evaluate the interrelationships among variables and the extent of agreement when different sources report on the same characteristic of a program, assess the accuracy of the measures. Other aspects of the research, such as detailed feedback reports of questionnaire responses to each program, were efforts to encourage use of the information by program participants. Interviews during staff visits to about half of the participating programs indicated that programs were using the data, or were planning to use it, in a variety of ways. However, the uses and the usefulness of the measures can only be suggested in a very tentative way in this report, and need to be explored in considerably greater detail before this research question can be answered with any confidence.

Program Assessment: A Rationale for Multiple Indicators

As indicated earlier in this chapter, the most common procedure for assessing quality in doctoral programs has been reputational ratings. This procedure relies on the impressions or opinions of a doctoral program that are held by faculty members in other doctoral programs within the same discipline, or by other experts in the same field. The result is a single, overall index of quality.

The multiple indicators approach to the assessment of quality, on the other hand, would normally include the perceptions and opinions of those within the program and also would contain information about a variety of program characteristics (see Table 1.1). The multiple indicators procedure makes it possible to examine departmental strengths or weaknesses in different program areas or features, and might well lead to the conclusion that, when a department is compared to other departments in the same discipline, it is strong in some areas but weak in others.[3]

A major premise of this study was that judgments about quality in doctoral programs will be better if they are based on multiple indicators of quality rather than on a single indicator. What do we mean when we assert that multiple indicators are "better"? Essentially we mean that, when compared with single indicators, multiple indicator procedures have at least four distinct advantages. They (1) are fairer, (2) are more useful, (3) reduce the problem of "halo effect," and (4) are more likely to stimulate internal thinking about and discussion of program achievements and shortcomings.

A multidimensional procedure is fairer. The use of a single indicator of doctoral program quality is virtually certain to be unfair to some doctoral programs. If, for example, the single indicator employed is one that assumes a research and scholarship model for the doctoral programs (as the quality of faculty ratings collected by the ACE clearly does, for example), then doctoral programs with other purposes will be penalized. Consider, for instance, a doctoral program in psychology that emphasizes the preparation of clinicians or a doctoral program in the humanities that emphasizes the preparation of college teachers. Neither of these programs would be fairly judged unless particular attention were given to quality indicators appropriate to their program purposes. Though the research and scholarship model clearly is the model preferred and claimed by the great majority of doctoral programs, there are nevertheless a number of exceptions to this tendency. And if the purpose of the evaluation is the review of individual programs, those programs that do emphasize the preparation of teachers and/or practitioners will not be given a fair opportunity to demonstrate their strengths.

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[3] "Program" is used throughout this report to refer to the doctorate-level offerings of a particular academic unit within a university. Because this unit usually is a department, the terms tend to be used interchangeably. However, the assessment procedures reported in this study were not designed to evaluate nondoctorate functions of university departments and, therefore, are incomplete as overall measures of departmental quality.

A multidimensional procedure would be far more useful. One of the glaring weaknesses of any unidimensional procedure for the assessment of quality--whether at the doctoral level or any other level of education--is that the information is seldom very helpful for a better understanding of a specific program's strengths and weaknesses. Participant feedback about various specific dimensions of a doctoral program--such as the students' ratings of the quality of teaching, the faculty ratings of the adequacy of the library holdings, or the alumni opinions about the dissertation experience--provides the stepping stones for program improvement.

Multidimensional procedures reduce the problem of "halo effect." One of the major shortcomings of peer reputational ratings is that a "halo effect" clearly serves to the unwarranted advantage of certain programs. Such halo effects occur in one or both of two ways. First, some weak departments benefit from the strong reputation of their universities, and thus receive better ratings than might be warranted simply because of their academic location. Second, some departments may be rated on the basis of their strengths in better days; they may be rated not for what they are but for what they were. (What might be called a "reverse halo" can also occur in both these ways. A strong department might be penalized by the weak reputation of its institution or by its own weaker status of yesteryear.) A multidimensional assessment procedure, especially if it leans heavily on the insights, experiences, and opinions of people in the program, would obviously be less affected by the problem of halo. Furthermore, multidimensional procedures would tend to move thinking away from the bipolar notion of departments being "strong" or "weak," and might refocus, instead, on the fact that departments are usually a combination of some strong points and some weak points, and the trick is usually to match these strengths and weaknesses to program purposes.

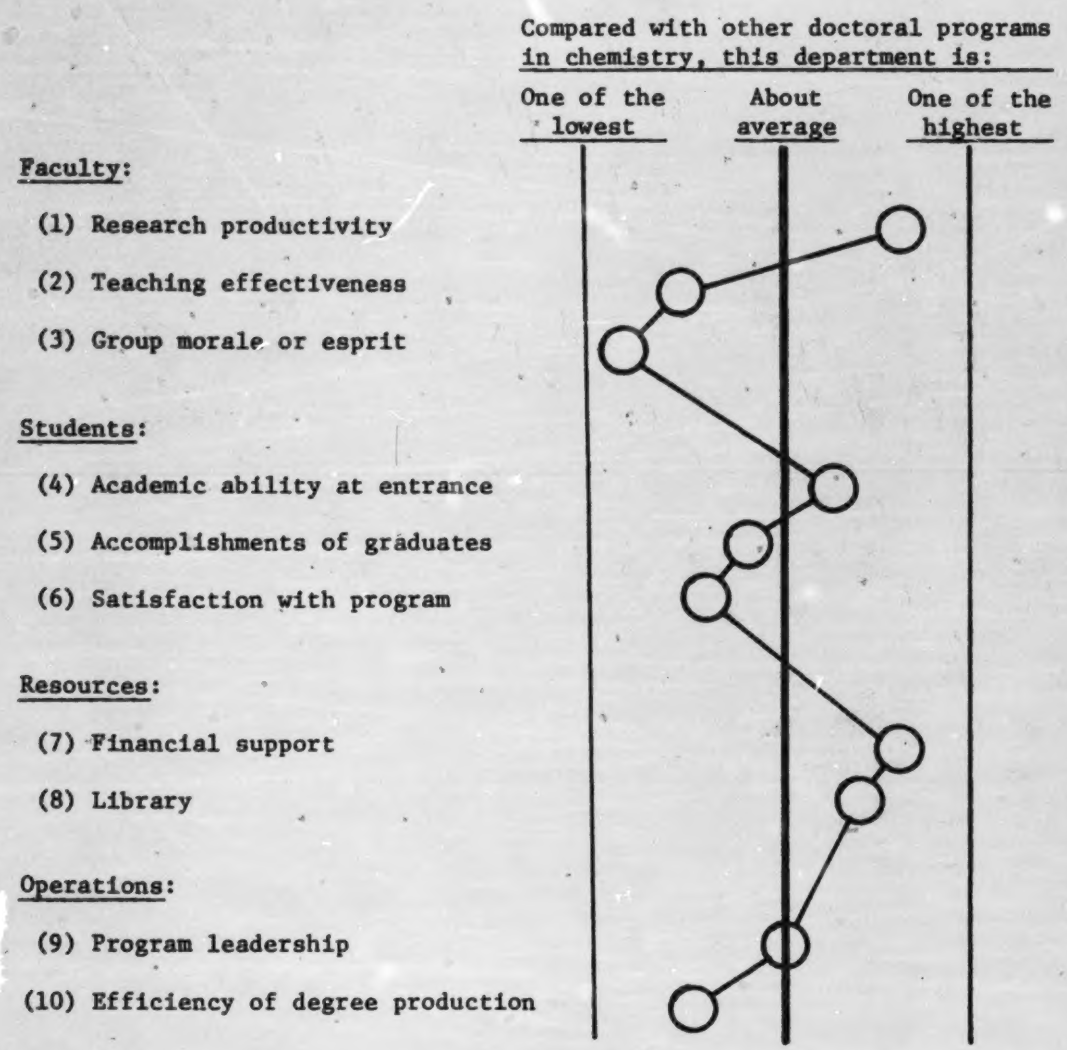
Multidimensional assessment procedures are more likely to place emphasis on the process. If we assume that the multidimensional approach will include a considerable amount of feedback information from students, faculty members, and alumni, then it is clear that program evaluation is less something that happens to the program than something that people in the program do together. The process of self-evaluation almost always carries with it the often-helpful byproducts of thinking about, discussing, debating, and compromising upon issues important to the future of a given program. Faculty members who have participated in institutional self-study efforts often report that the process of the self-study was every bit as important as any summative report. Such a process can bring about a certain amount of internal discomfort, both for students and faculty, but the long-range consequences for the department are very likely to have been well worth it.

Examples of Multiple Indicator Profiles for Doctoral Programs

In order to illustrate several possible approaches to interpreting multiple indicator information about doctoral program quality, two contrived example profiles are presented in Figures 1.1 and 1.2. In both figures, 10 possible indicators of program quality were arbitrarily chosen from the 30 indicators listed in Table 1.1. (It is important to emphasize at this point that these indicators are not necessarily ones that emerged as particularly important or reasonable from this research. They are listed in these figures as examples only.)

In Figure 1.1 an example profile of a hypothetical chemistry department is sketched. Note that one attractive feature of this approach is that the department's standing with respect to the 10 quality indicators is given in comparison with other doctoral programs in chemistry. In this particular example, the chemistry

Figure 1.1. Example of a Department Profile on Ten Possible Indicators of Program Quality[a]



[a] This is an example only, constructed to be illustrative of the advantages of a multiple-indicators evaluation model. The ten indicators were chosen arbitrarily from Table 1.1.

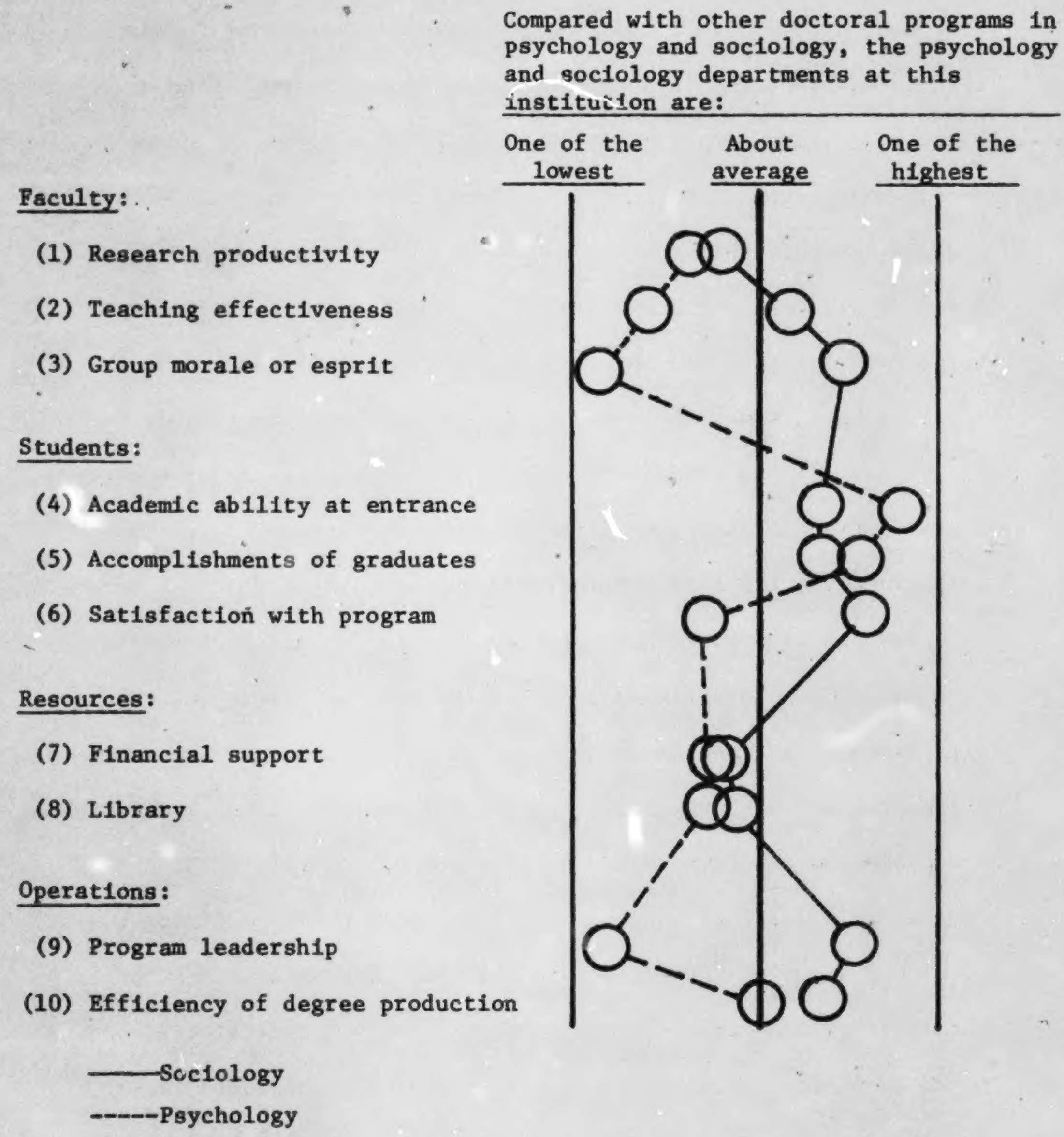
department is considerably above the average of other chemistry departments with respect to research productivity and financial support, somewhat above the average of other chemistry doctoral programs with respect to student academic ability and library facilities, about average in program leadership, but below average in terms of the accomplishments of its graduates and current student satisfaction with the program, still farther below the average of other departments for efficiency of degree production and teaching effectiveness, and, finally, near the bottom when it comes to faculty morale or esprit. In effect, this make-believe chemistry department, when compared with other doctoral programs in chemistry, appears to be faring quite well on the several traditional indicators of doctoral program quality (e.g., research productivity, student ability, facilities) that are often fairly well-known about programs, but is not doing nearly as well on several of the less traditional and generally less well-known quality indicators (e.g., faculty morale, teaching effectiveness, efficiency of degree production). In effect, then, the sort of multiple indicator profile notion suggested here would accomplish two things: it would provide information about more indicators of program quality than might otherwise be considered, and it would provide all such information about a program in comparison with measures of the same characteristics at other doctoral programs in the same discipline.

At this point the careful reader may have a number of important questions about the mechanics of the sample profile presented in

Figure 1.1. For example, is it possible to obtain information that would be acceptable as measures of some of the ten listed indicators of doctoral program quality--especially such characteristics as teaching effectiveness, group morale, accomplishments of graduates, program leadership, and the like? And though the example profile indicates that one's own department is being compared with the data from "other doctoral programs," one might want to know _what_ other doctoral programs? All of them? Only a chosen few? These questions are extremely important. Since most of this report is directed to answering such questions, however, we ask the reader to postpone major concern about them, and to continue to explore with us the _concept_ and _potential_ of a multiple-indicators approach to the assessment of doctoral program quality.

We have used Figure 1.1 as an example of how a multiple-indicator approach might be used to compare a given department's standing on a number of important characteristics with the standing of other departments in the same discipline. But what about the possibility of comparing one department relative to other programs in the same discipline with a program in another discipline within the same institution? Such comparisons are also possible, and one example of how they might look is sketched in Figure 1.2. This is essentially the same as Figure 1.1, except that in Figure 1.2 we have included contrived data for two departments--psychology and sociology--within the same institution. The data connected by solid lines (the sociology department) suggest that this department's research

Figure 1.2. Example of a Comparison of the Profiles of Two Departments Within the Same Institution



productivity is somewhat below the average of other sociology departments, but above the average of other sociology programs on teaching effectiveness, group morale, and so on. The data represented by broken lines (the psychology department) indicate that this department is near the bottom of the distribution of other psychology departments on such characteristics as group morale and program leadership, but fares better when it comes to student academic ability, accomplishments of graduates, and the like. Thus, when compared with other departments in their own respective disciplines, this institution's sociology department seems to be in somewhat better condition on these ten indicators of program quality than is the psychology department. (Note that the comparisons between departments are made with reference to departments in the same discipline at other universities. A more detailed discussion of this point is included in the last chapter.)

As with the fictitious profile presented in Figure 1.1, there are several questions that one might want to raise about the specific procedures and measures needed to put together the kind of data that are presented in Figure 1.2. At this point, however, it is the concept of a multiple indicators procedure that we are trying to develop. Assuming for the moment that reliable information can be obtained about a number of the more important characteristics of doctoral program quality, the advantages of such a procedure for doctoral program evaluation are substantial. Whether reliable information can be obtained for such a purpose is the basic question addressed in this report.

One final point about such multiple indicators of program quality would seem to be appropriate. Though there are some doctoral program characteristics that virtually all observers would agree are desirable ones for any doctoral program to have--overall positive faculty morale, for example, or graduates who perform well in their subsequent careers--it is nevertheless true that many indicators of program quality at the doctoral level may be "good" for some kinds of programs and "bad" for others. Though most doctoral programs would hope for a high "score" on such characteristics as research productivity or student academic ability at entrance to the program, even these indicators would not receive uniform endorsement among programs at the doctoral level. Thus, in effect, there would be no such thing as an optimum profile appropriate for all doctoral programs. Instead, the profile for each doctoral program would need to be judged in relation to its circumstances and its objectives.

Overview of the Research

The procedures of sample selection, questionnaire development, data collection, and data analysis are detailed in Chapter 2. Chapters 3 and 4 discuss the general issues of program quality ratings and ways to characterize different program purposes. Chapters 5 through 10 present research results on ways to measure program characteristics in six areas: training and productivity of the faculty, academic ability and achievement of students, physical and financial resources, the academic and work environment, the academic program, and alumni achievements. Chapter 11 summarizes the research results and presents normative profiles on selected variables for each of the three disciplines. Results of the research are evaluated in this chapter, and ways in which they may be useful to the graduate community are suggested. Readers may wish to turn to this chapter first, and then return to the chapters that present the research procedures and results in detail.

Chapter 2

STUDY PROCEDURES

The basic purposes of the study and the major questions that guided the design of the research are discussed in the previous chapter. There were, however, some early decisions concerning parameters of the study that should be noted here.

1. The study would be exploratory in nature and, therefore, limited to doctoral programs in three arts and sciences disciplines in 20 to 25 universities. The universities would be selected to represent the full range of doctorate-producing universities in the United States.
2. The research would assess many aspects of doctoral programs, emphasizing the characteristics that were judged most important to educational quality by graduate deans and listed in Table 1.1. Because of a widespread and continuing interest in the ACE reputational ratings of programs, new peer ratings of faculty quality and program attractiveness also would be obtained but only for the limited number of programs in the study.
3. If at all possible, one set of data collection instruments would be developed for use in all three disciplines, in order to maximize the possibility of comparisons across as well as within disciplines.
4. The study would concentrate on quantifiable measures of both qualitative and quantitative aspects of programs, aggregating

questionnaire responses or obtaining information from departmental records to describe the programs in ways that permit comparisons between programs, the construction of profiles, and statistical analyses. Although a large number of variables were to be assessed in the study, one goal of the research was to identify a manageable number of measures that demonstrate satisfactory reliability and validity as indicators of important program characteristics.

5. Wherever possible, attention would be given to questions concerning the feasibility and utility of the assessment procedures for future use, including methods and costs of data collection, procedures for the feedback of data to participating programs, and ways in which the information about individual programs might be used by participating institutions.

The proposed study was approved and funded by the National Science Foundation to the Council of Graduate Schools beginning July 1, 1974. Educational Testing Service, which had conducted the earlier survey of graduate school deans for the Graduate Record Examinations Board and had developed the research proposal, contracted to conduct the research. The researchers were guided and assisted throughout the project by a hard-working steering committee of graduate deans who were appointed by the Council and the GRE Board.

The disciplines of chemistry, history, and psychology were selected for study because they represented different major areas of academic endeavor, had well-established doctoral programs in most major universities, and had indicated concern about the problems of doctoral education through participation in earlier studies. Contact with an officer in the major professional association of each discipline indicated that there would be a high level of interest in the study that was proposed, and that there would be at least informal encouragement within the discipline for programs to participate.

An additional reason for deciding to study three different disciplines was to provide a practical test of whether or not it was feasible to use one set of data collection instruments in all of the departments. The ability to use the same questionnaires and forms in a number of disciplines had several practical consequences. For example, if different questionnaires had to be constructed for each discipline, data collection would be much more difficult and expensive even though it would still be possible to compare programs within that discipline. At the same time, there was a need to include questions that were appropriate to the structure and culture of the disciplines in the study.

To help us understand the major concerns in these three fields and to inquire about them as appropriately as possible in the questionnaires, a small advisory committee of prominent academicians in each of the three fields was appointed by the project steering committee. Each advisory committee met with the researchers to critique draft versions of the data collection instruments, and also reviewed drafts of this report of the research results.

Sample Selection and Enlistment

The first step in selecting a sample of 20 to 25 universities was to identify those that had granted doctoral degrees in all three fields--chemistry, history, and psychology. A complete list of these 114 institutions will be found in Appendix B. The list includes most of the universities that produce doctorates in these fields with the exception of technical institutes in chemistry and professional programs in psychology.

In order to be sure that the sample would include a number of the departments that train the greatest number of students in each field, the list of universities granting degrees in these three fields was ordered by total number of doctorates awarded in a recent three year period. The list was then divided into four sections so that each section represented the production of one quarter of the total number of doctorates granted by all of the universities in the specified time period. A random sample of seven institutions was selected from each of the first two groups and six institutions from each of the third and fourth groups for a total of 26 universities in the study sample (Moses & Oakford, 1963).

Table 2.1 compares the sample 26 universities with the universe of 114 universities on public and private control, geographic region, and reputational rating of the quality of the graduate faculty. The sampling procedure produced a good distribution of institutional settings and program sizes. It also resulted in a fairly uniform distribution of reputational ratings across the three disciplines,

Table 2.1

Comparison of Sampled Institutions with All Universities that Grant Doctoral Degrees in Chemistry, History, and Psychology

	Population		Sample	
	N	%	N	%
Control				
Public	76	67	19	73
Private	38	33	7	27
Region				
Northeast	11	10	1	04
East	23	20	4	15
Midwest	29	25	9	35
South	25	22	6	23
West	26	23	6	23
Program Ratings*				
Chemistry				
3.0 or above	32	28	11	42
2.5 - 2.9	18	16	6	23
2.0 - 2.4	14	12	3	12
Not listed	50	44	6	23
Psychology				
3.0 or above	31	27	14	54
2.5 - 2.9	15	13	2	08
2.0 - 2.4	21	19	5	19
Not listed	47	41	5	19
History				
3.0 or above	25	22	11	42
2.5 - 2.9	10	09	4	15
2.0 - 2.4	21	18	5	19
Not listed	58	51	6	23

*Roose & Andersen, 1970.

with some programs at each level. There were a larger proportion of programs in the sample with reputational ratings of 3.0 or above and a smaller proportion of programs in the "not listed" category because of the stratified sampling procedure. This was considered appropriate because the study was particularly concerned with the assessment of program characteristics associated with a high level of educational quality. Each of the discipline advisory committees felt that the resulting list of universities provided a reasonably representative "mix" of programs in its field.

The president of the Council of Graduate Schools then invited the graduate dean at each of the 26 selected universities to cooperate in the study. Twenty-five agreed to participate and provided the name of a campus coordinator to manage the data collection. Copies of the invitational materials and guidelines for on-campus data collection can be found in Appendix A. Participating universities are listed in Table 2.2.

Questionnaire Development

Information about each program was sought from five sources: faculty members who teach doctoral students, advanced graduate students, alumni three to five years after receiving their degrees, department chairmen, and departmental records. Topics covered in the questionnaires were guided by the list of program characteristics developed from the survey of graduate deans and shown in Table 1.1, and by the deans' ratings of a variety of possible program indicators. Details of these ratings can be found in Appendix C.

Table 2.2

Project on Dimensions of Quality in Graduate Education

Participating Institutions

Boston College
University of California, Berkeley
University of California, Davis
University of California, Los Angeles
University of Colorado
Emory University
Florida State University (Tallahassee)
Indiana University (Bloomington)
University of Iowa (Iowa City)
University of Kansas
Louisiana State University (Baton Rouge)
University of Maryland
University of Michigan
University of Minnesota
University of Missouri (Columbia)
New York University
Northwestern University
Oklahoma State University (Stillwater)
University of Pennsylvania
Princeton University
Stanford University
University of Toledo
University of Utah
West Virginia University
University of Wisconsin- Madison

Five kinds of questions were included in the student questionnaire: (1) extent of agreement with several statements about the department; (2) ratings of the department's faculty, facilities, and curriculum; (3) characterization of students in the department, based on "critical incidents" of outstandingly good or poor students as identified by faculty members (Reilly, 1974); (4) perceptions of program emphasis on the preparation of researchers, teachers, or other practitioners; and (5) personal information. Respondents were invited to add comments about their department and reactions to the questionnaire on the last page. Copies of all questionnaires used in the study are included in Appendix D.

The alumni questionnaire was designed to parallel the student questionnaire wherever appropriate, in order to obtain two different viewpoints about the same aspects of graduate departments. In addition, alumni were asked to evaluate their dissertation experiences, rate their satisfaction with the program and the extent to which it prepared them for their present work, and report postdegree scholarly accomplishments.

The faculty questionnaire also paralleled the student questionnaire in structure, although only the set of items to characterize students in the department and the items concerning perceptions of program emphasis were exactly identical. Other items were selected to obtain a brief but comprehensive view of the department from the faculty perspective. Faculty members were also asked to estimate the average weekly amount of time they spent on various professional activities, and to report participation in professional associations, awards, publications, presentations, and background characteristics.

In addition, faculty members were asked to rate the quality of the graduate faculty and the attractiveness of the doctoral program in their fields at the 25 universities in the study. The same format was used for these ratings as that used in the American Council on Education reputational ratings (Cartter, 1966; Roose & Andersen, 1970). The results are reported and compared with the earlier findings in Chapter 4.

The items of information requested on the departmental profile form were based on indicators rated important and available by the panel of graduate deans in the earlier study (see the "University/ Department Records" section of Appendix C). The information includes the number of students and faculty members, admissions data, financial assistance data, faculty research involvement, degrees granted, placement of graduates, and so forth. A common form to collect this kind of information proved to be the most difficult questionnaire to construct because there is little agreement among universities on ways to define these characteristics or activities. For much the same reason, it was also the most difficult questionnaire for program representatives to complete. Some programs did not have the records needed to provide the requested information; other representatives reported that compiling the information in the form requested would be inordinately time-consuming and expensive. Even when the information was reported, it was often accompanied by a note of uncertainty about its reliability. For these reasons, only selected items from this form have been used in reporting and analyzing results of the research. The items that were evaluated are marked on the copy of the questionnaire in Appendix D. Problems with some of these data are discussed in Chapter 7 as well as in other places in the report. It is interesting to note here, however, that the information that the graduate deans said was most readily available on their campuses (e.g., enrollment and expenditure data) turned out to be the hardest to collect in ways that would be comparable across programs, while the judgments and opinions of program participants that few departments collect with any regularity could be collected relatively inexpensively, efficiently, and reliably.

The last questionnaire was a brief form for the departmental chairman to complete. It asked about some departmental practices and experiences in recent years, requested ratings of other departments in the same field on the same form as in the faculty questionnaire, and inquired about the procedures used to conduct the on-campus data collection for this study.

Data Collection

A campus coordinator was appointed by each graduate dean to manage on-campus data collection for the study. Faculty and student questionnaires were shipped in bulk to each coordinator in April of 1975, distributed and collected by departments, and returned to

Educational Testing Service by the coordinator. Each questionnaire was accompanied by an envelope which could be sealed to protect the confidentiality of the reply; only the respondent's name and department were on the outside, to facilitate follow-up of nonrespondents. Departments were instructed to distribute faculty questionnaires to all faculty members who teach doctoral students, and student questionnaires to all advanced doctoral students (defined as usually in their third year or beyond of graduate study). Guidelines for on-campus data collection will be found in Appendix A.

Table 2.3 summarizes the reports from the department chairmen about the data collection procedures. Distribution and collection of the questionnaires were most frequently handled by a departmental secretary, usually through campus mail. A few departments limited student questionnaire distribution to students who had achieved candidacy status and therefore were not on campus with any regularity. These departments and some others mailed questionnaires to students, often at considerable trouble and expense. Some departments also mailed questionnaires to faculty members, particularly if the questionnaires were distributed when regular classes were not in session.

About two-thirds of the departments reported that they followed up on nonrespondents, usually with a memorandum or a personal reminder. Most felt that the procedures that were used were at least fairly effective and that most students and faculty members were willing or at least neutral respondents.

Campus coordinators were requested to obtain lists of persons who received doctorate degrees from each of the three departments

Table 2.3

Departmental Report of Procedures Used to Obtain Student and Faculty Questionnaires (in percentages)

	Faculty Questionnaires			Student Questionnaires		
(N)	Chem (22)	Hist (23)	Psy (21)	Chem (22)	Hist (23)	Psy (21)
1. Who managed the distribution and collection of questionnaires?						
Department chairman	9	35	24	14	13	19
Faculty member	0	17	10	0	13	10
Dept. assistant	32	9	29	32	4	29
Secretary	55	30	33	55	57	33
Student	0	4	0	0	4	0
Dean's office	5	0	0	0	4	5
Other	0	4	5	0	4	5
2. How were the questionnaires distributed?						
Campus mail	59	74	90	59	57	81
U.S. mail	5	13	5	5	43	14
Through classes	5	0	0	9	4	0
At a faculty meeting	9	17	5	00	0	5
At a meeting of students	0	0	0	9	9	10
Available to be picked up	0	17	5	5	22	10
Other	27	4	0	27	0	0
3. Did you do a follow-up on nonrespondents?						
Yes	68	87	71	73	74	62
No	27	13	24	23	22	33
4. What follow-up procedures did you use?						
Verbal reminder (Meeting)	0	17	10	0	17	5
Memorandum reminder	41	57	48	45	43	48
Second questionnaire	5	4	10	5	4	5
Personal contact	36	52	38	32	39	33
Other	5	0	0	5	0	0
5. Effectiveness of distribution and collection procedures						
Very effective	55	57	33	50	43	29
Fairly effective	41	43	57	41	43	57
Not effective	0	0	0	5	4	5
6. General response to the questionnaire and research						
Enthusiastic	5	0	0	5	4	0
Willing	45	70	57	41	52	52
Neutral	18	22	29	32	30	33
Reluctant	23	4	14	18	4	14
Resistant	5	0	0	0	0	0

in 1970, 1971, and 1972, and to send them to the researchers so that alumni questionnaires could be mailed directly to these graduates. Lists of alumni names and addresses were received from almost every department; in a few cases, a department preferred to contact its alumni directly, and a supply of the questionnaires and return envelopes were provided for this purpose. Problems locating alumni and obtaining responses from them are discussed in greater detail in Chapter 10.

Campus coordinators also distributed the departmental profile and department chairman questionnaires to appropriate respondents, assisted in collecting information for the profile forms, and sent us copies of descriptive literature about doctoral programs in the three departments. It would not have been possible to carry out the study without the assistance of these staff members at the participating universities.

Questionnaire Responses

It is difficult to compute accurate response rates for the student and faculty questionnaires because of the method used to distribute them. Each department estimated the number of questionnaires it would need; they were sent this number plus about one-third extra, to cover loss and to use in following up on nonrespondents. But it was clear that many of these numbers were very rough guesses. Therefore, the department chairman questionnaire asked for the number of student and faculty questionnaires that were actually distributed, and these reports were used to estimate response rates. The number of usable questionnaires that were received in each discipline is reported in Table 2.4.

In general, it appears that about two-thirds of the student questionnaires were returned, and that about three-fourths of the faculty members returned questionnaires. Both the number of returns and interviews during site visits suggest that the faculty members of most departments were canvassed fairly thoroughly, and that their aggregated responses represent departments reasonably accurately. The representativeness of the student respondents is harder to gauge, since departments could interpret the instruction to distribute questionnaires to advanced graduate students in different ways. The median number of student respondents per department is about 27 in each discipline, but the range is from six respondents (from two departments that reported the distribution of 9 and 13 questionnaires respectively) to one department in each discipline with more than 100 respondents. Since all data in the report are summarized by department before comparisons are made, different numbers of respondents per program do not influence the statistical results. Individual program indexes based on only a few responses may, however, be somewhat less reliable than similar indexes for other programs that are based on a broader response.

About 90% of the participating departments in each discipline returned usable departmental profile forms and department chairman questionnaires. As mentioned earlier, there was a high omission rate on some of the individual items on the departmental profile form.

Table 2.4

Response Rates

	Chemistry	History	Psychology
Student questionnaire			
Usable individual returns	791	893	967
Number of programs with usable data[a]	24	25	24
Range of respondents per program:			
Low	6	9	6
Median	27	29	27
High	104	124	202
Average response rate	69%	66%	69%
Median response rate	64%	71%	67%
Minimum response rate	39%	33%	34%
Faculty questionnaire			
Usable individual returns	511	584	598
Number of programs with usable data[a]	24	25	24
Range of respondents per program:			
Low	8	10	9
Median	21	23	20
High	38	38	61
Average response rate	80%	78%	72%
Median response rate	85%	71%	74%
Minimum response rate	46%	48%	38%
Alumni questionnaire			
Usable individual returns	430	349	393
Number of programs with usable data[b]	20	18	17
Range of respondents per program:			
Low	10	5	6
Median	20	17	19
High	68	43	37
Average response rate	46%	46%	45%
Median response rate	47%	46%	43%
Minimum response rate	26%	29%	33%
Departmental profile: number returned	21	23	21
Dept. chairman questionnaire:			
Number returned	22	23	21

[a] One department of chemistry and one department of psychology declined to participate in the study. Sufficient usable data were received from all participating programs to include them in the analyses of faculty and student responses.

[b] See Chapter 10 for discussion of alumni responses.

A detailed description of the programs in the study and the characteristics of respondents can be found in Appendix E. In general, the average profile across programs in each of the three disciplines is quite similar, with about 27 or 28 faculty members, 100 doctoral students, and 18 doctor's degrees awarded per year.

Almost all of the faculty respondents held the Ph.D. degree (an average of 99% in chemistry and psychology, 96% in history) and 98% were full-time members of the faculty. Three items in common on the faculty questionnaire and the departmental profile provide one check on the validity of the information provided by these different sources; responses to these items are reported in Table 2.5. The similarity of these responses suggests that the faculty respondents are very much like all faculty members in their departments, at least in the reported ways.

The descriptive profile of students in Appendix E indicates that student respondents in the average program in each discipline had been enrolled in the program for four years or more. About 70% of the respondents expected to receive the Ph.D. degree in 1975 or 1976. Most had done graduate study only at the university being described and were enrolled full time. In history and psychology, students in more than 80% of the programs reported average graduate grade-point averages of 3.5 or higher; students in only 55% of the chemistry programs reported average graduate school grades of 3.5 or above. Most of the students were under 30, U.S. citizens, Caucasian, and male.

Table 2.5

Comparison of Average Data from Departmental Records with Average Aggregated Data from Faculty Questionnaire Responses (in percentages)

	Chemistry	History	Psychology
Tenured appointment			
Profile	85	87	74
Questionnaires	81	78	71
Outside research grant			
Profile	68	10	37
Questionnaires	67	19	43
Percent of faculty with highest degree from "leading institutions"			
Profile	84	91	72
Questionnaires	87	86	73

Data Analysis

Almost all of the data analyses have been carried out separately for each discipline. Five analytical techniques predominate:

1. Item response frequencies. Since a primary purpose of the research was to provide measures of programs that would be useful in self-studies and for program renewal, considerable attention has been given to the ways in which participants in programs responded to individual items on the questionnaires. The item response frequencies for the student, faculty, and alumni questionnaires were summarized for each participating program in detailed feedback reports, together with comparison data for large and small departments (discussed below). Three copies of each feedback report were sent to each university. Samples of these feedback reports and accompanying interpretive materials will be found in Appendix G.

   In addition to the feedback reports to individual programs, selected item response frequencies have been used in the other analyses described below (e.g., a program's percent of faculty with an outside research grant, or the percent of alumni respondents from a particular program who report "extremely good" career preparation). Within-program responses to items on the quasi-continuous scales of agree-disagree and excellent-poor, as well as genuinely continuous variables such as number of publications or years of teaching experience, were averaged and the mean scores used to represent programs on the relevant characteristics.

2. Within-discipline comparison groups. Program response frequencies were averaged for subsets of programs grouped according to size or reputational rating. Two comparison groups based on program size were provided with each feedback report: the average response frequencies for 12 programs in the same discipline awarding the largest number of doctor's degrees in a recent three-year period, and the average response frequencies for the 12 or 13 programs awarding a smaller number of degrees. Program representatives could compare tabulations of responses by participants in their program with the average responses from programs of roughly similar size and could also see if there appeared to be very different patterns of response for larger and smaller departments in their discipline.

A similar procedure was used to construct comparison groups composed of departments with graduate faculties rated "distinguished" or "strong," "good" or "adequate," and "marginal" or "not sufficient for doctoral training" by peers who participated in the study (see item 25 on the faculty questionnaire and Chapter 4 for details of this variable). For convenience, these groups have been termed high, medium, and low reputational groupings, and have been used in several chapters of this report to examine the way in which a program indicator operates similarly or differently in departments with varying reputations, both within and across disciplines. For the student and faculty questionnaires, the highly rated group consists of six programs in chemistry and seven programs in history and psychology, all with peer ratings of the quality of the graduate faculty above 3.6 (5 = distinguished, 4 = strong, 3 = good). The low group consists of six programs in chemistry and history and five in psychology, all with peer reputational ratings below 1.9 (2 = adequate, 1 = not sufficient for doctoral training). The middle group is made up of 12 programs in each discipline with reputational ratings between 3.5 and 2.1.

Reputational ratings were selected as a grouping variable for these descriptive statistics because of a widespread interest in the ways in which other program characteristics relate to peer judgments, and because these groupings seemed to provide a useful way to consider the distribution of certain other program descriptors. However, the use of reputational ratings as a grouping variable should not be given undue weight in the interpretation of the research results. There is variation among programs within these subgroupings as well as across all programs within each discipline.

3. Scale construction. Data analysis indicated that some of the items in the questionnaires were measuring similar aspects of a program and that the responses to these items could be grouped to form a single scale score to represent that characteristic. Combining items to form scale scores reduces the number of individual items that need to be reviewed, and also provides a program-level indicator that

tends to be even more consistent and reliable than summaries of individual item responses. A total of eight scales were formed from the student questionnaire, six scales from the faculty questionnaire, and two scales from the alumni questionnaire. The items in each scale, item-item and item-scale correlations, and estimates of scale reliability and homogeneity are presented in Appendix F. An analysis of variance was computed for each scale to determine that variation between programs was greater than the within-program variance of responses; only scales with significant _F_ values were retained for use. The composition and interpretation of each scale will be discussed at an appropriate point as the results of the study are reported.

4. Correlations. Pearson product-moment correlation coefficients of association between two variables are frequently used to present results in this report. All correlations are computed within disciplines using programs as the level of analysis (e.g., program mean scores or percent responses). The number of cases is small (usually 24 or less), but the aggregated variables are much more reliable than would be the case with individual measurements. If we were using individual rather than aggregated measures, correlations based on 24 or 25 cases (the number of departments in any one discipline) should achieve a magnitude of roughly .35 to .40 before being considered significantly different from zero

(McNemar, 1965).[1] Obviously these would be conservative estimates of significance when the measures represent aggregated data, but there is no way to adjust statistically for this increased reliability. Therefore, since this report is concerned with patterns of association between program characteristics rather than with differences in the sizes of the correlations, the correlations will be interpreted as estimates of level of relationship, and statistical significance is not reported.

5. Scatterplots. One way to evaluate the meaning of a correlation between two variables is to present a scatterplot of the programs in each discipline on both dimensions. This technique is used at several points in the following chapters. A particular advantage of scatterplots is that the range of scores across departments on a particular variable is immediately apparent, as are unusual deviations on one or both variables by a few departments. Scatterplots also tend to remind the reader that correlations represent general tendencies for a group of programs; though they may be high, there is ample opportunity for meaningful deviations by individual programs.

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[1] Confidence bands are also difficult to estimate for correlations based on a small number of cases because they are not uniform over the distribution. As a benchmark example, however, the 95% level of confidence for a correlation of .70 based on 24 cases would range from .41 to .86 if the test is two-tailed, or between .47 and .84 for a one-tailed test (McNemar, 1965, p. 138).

Site Visits

After all of the data were collected and collated and feedback reports had been sent to the participating departments, members of the research team visited about half of the universities in the sample. These site visits were intended to gain first-hand information from the departments about their programs, answer questions about the departmental feedback reports and the study in general, and attempt to determine some of the ways in which departments and universities might plan to use the information that had been collected. A copy of the letter to graduate deans concerning site visits and a guide for interviews can be found in Appendix A.

Though the site visits included frank discussions with a number of department chairmen and graduate deans, it soon became apparent that they needed more time to evaluate the usefulness of the program information they had received. The visits were helpful, however, in sensitizing the researchers to some of the important campus issues and suggesting interpretations for some of the research results.

Presentation of Research Results

This technical report of the findings of the study is organized around seven major dimensions of program quality and three program variables that appear to be related to several aspects of quality. The seven dimensions of quality are (1) student abilities and achievement, (2) faculty training and performance, (3) physical and financial resources, (4) the environment, (5) curriculum and academic procedures, (6) alumni accomplishments and judgments about the program, and (7) overall judgments about a program's excellence. The last dimension, overall judgments, is discussed in Chapter 3. The others are discussed in order in Chapters 5 through 10.

Variables related to several aspects of quality include discipline, program purpose, and program size. Only program purpose is discussed at length as an independent variable (Chapter 3). Separate data for each of the disciplines are presented throughout the report, and program size is included wherever appropriate. A summary will be found at the end of most chapters. Some readers may prefer to read these summaries first, before examining the research results in detail.

The final chapter also summarizes the research results and then presents three or four indicators from each of the six program areas in the form of a multidimensional profile which can be used to compare individual programs with other programs in the same discipline. Measurement reliability, validity, and discrimination between programs were considered in selecting the indicators to be included in the profile. This chapter also evaluates the overall results of the research and suggests ways to utilize the results. The reader with limited time, or a desire to obtain an immediate overview of the study, may wish to turn directly to Chapter 11.

Chapter 3

PROGRAM PURPOSES

The Ph.D. degree was expected to be the end product of most of the programs in this study, though programs offering D.A. or Ed.D. degrees were not ruled out. This proved to be the case; a Ph.D. was the reported degree goal of virtually all (96% to 100%) of the student respondents in each of the participating programs. Since this is the traditional degree for the preparation of researchers and scholars in the academic disciplines, a high level of emphasis on the preparation of researchers was expected among these programs. There are at least two other tasks, however, that were expected to be emphasized as well: the preparation of college teachers, and the preparation of other practitioners such as clinical psychologists, museum curators, or industrial chemists. Some variation of purpose was expected because recently a panel of graduate school deans ranked the preparation of college teachers as the most important task of Ph.D. programs in the humanities, and the deans reported that the preparation of researchers and teachers received equal weight in the social sciences. Only in the physical sciences did most universities clearly place primary emphasis on the preparation of researchers. Though not as frequently emphasized as research or teaching, the training of practitioners was ranked most important in each area at a few universities (Clark, 1973; 1976).

The same panel of graduate school deans concluded that there are no large differences in the information needed to make judgments about the quality of doctoral programs designed to train teachers or practitioners instead of researchers, but there are differences of emphasis that make it important to take program purposes into account when evaluating their quality. For example, the deans assigned high importance to teaching skill in all programs, but gave it special weight in programs designed to train teachers. Similarly, faculty research skill and productivity were considered important in all doctoral programs but especially in programs to train researchers. Training other kinds of practitioners may require internships or a degree of community involvement that are not necessary in programs with other primary purposes. The purposes of a program have some bearing on the resources that are needed and the ways in which these resources are allocated. And, of course, expectations for alumni careers would differ depending upon a program's emphasis. The recognition of variations in program emphasis also represents a source of pressure for the development of ways to assess many different aspects of graduate programs, since multiple program purposes call for multiple criteria of quality (cf., Panel on Alternate Approaches to Graduate Education, 1973; National Board on Graduate Education, 1973 and 1975; Education Commission of the States, 1975).

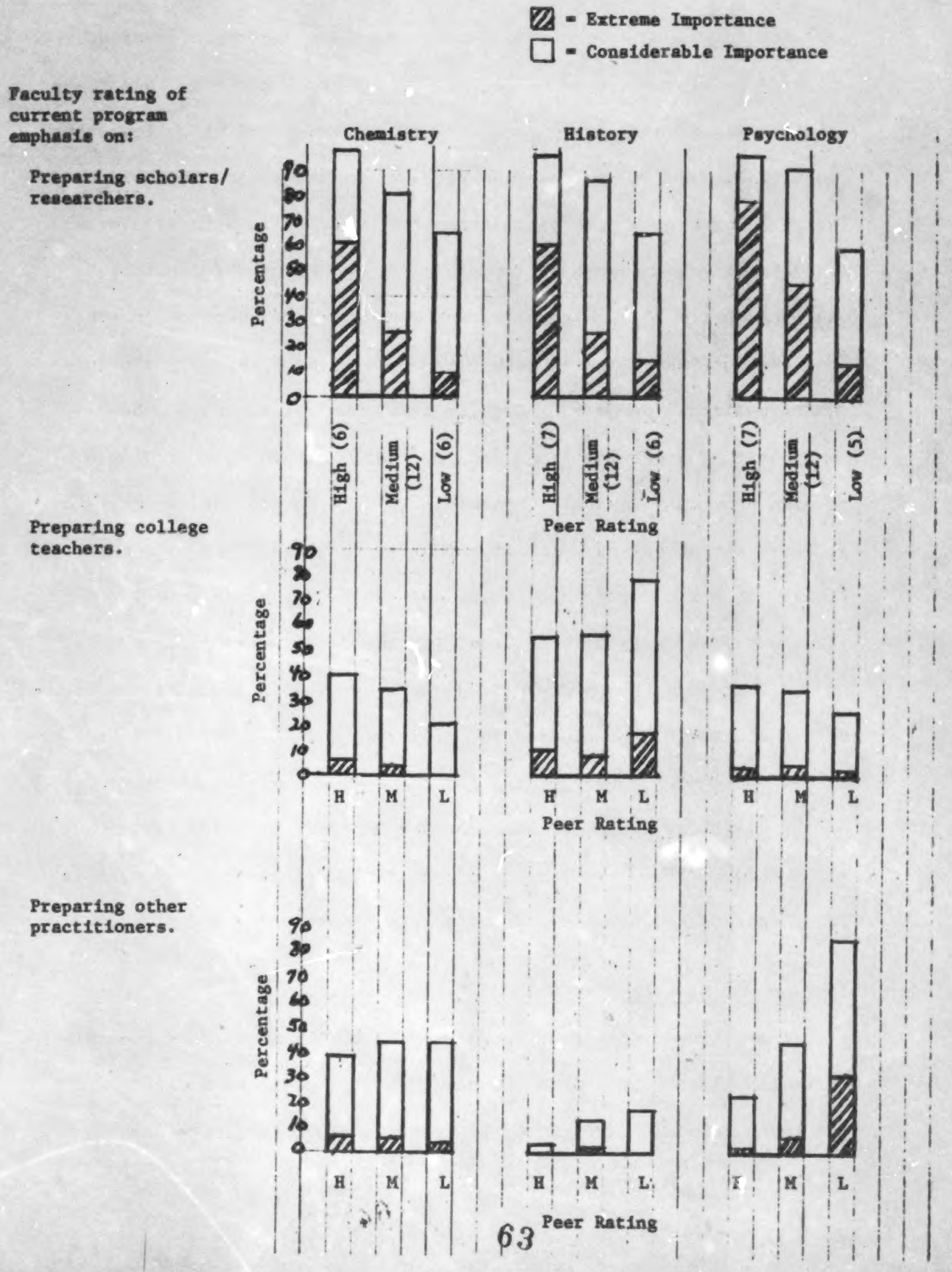
One of the goals of this study was to consider assessments of quality in relation to program purposes. The emphases of programs were investigated by asking faculty members and advanced graduate students to rate the degree of importance their department currently assigned to each of three different purposes or functions: preparing scholars/researchers, preparing college teachers, and preparing other practitioners. Each purpose was rated on a five-point scale from "extreme importance" to "no importance." Faculty members also were asked to rate the degree of importance they thought the department ought to assign to each purpose, and students were asked to indicate the level of importance of each purpose to their personal goals (see questionnaires, Appendix D, for exact wording and format). When summed within programs, these data provided three different views of each program's academic emphasis: (1) the percent of faculty and students who perceived a lot of emphasis (responses 4 or 5 on the five-point scale) on each purpose, and the extent of agreement between the two sets of observers; (2) the discrepancy between what is and what ought to be emphasized, as a measure of satisfaction with the current emphasis and the preferred direction of movement in the event of any change; and (3) the average faculty perception of the weight assigned to each program purpose. The last measure was considered the best single indicator of current program emphasis. These results are presented and discussed in this chapter.

Faculty and Student Perceptions of Emphasis

The average percent of faculty members who think their programs currently place "extreme" or "considerable" importance on each of the three purposes is shown in Figure 3.1. In this figure the

Figure 3.1

Faculty-Rated Program Purposes, by Discipline and Peer Rating



programs have been grouped according to the peer ratings of their graduate faculties, as described in Chapter 2. Faculties of programs in the "high" groups were rated "strong" or "distinguished" by their peers, clearly identifying them as the most prestigious programs in the sample. Faculties of programs in the "low" groups were rated barely "adequate" or less than adequate by their peers, clearly distinguishing them as the least prestigious in the sample. The middle (and largest) groups of programs are more varied but all are considered by peers to be better than "adequate" in their capacity to provide doctoral training.

It is not surprising that the high prestige programs all place extreme or considerable importance on preparing scholars/researchers and much less emphasis on the other two purposes, as indicated in Figure 3.1. These are programs with outstanding research faculties and scholarly reputations; programs in the humanities and social sciences as well as in the natural sciences are expected to emphasize research. However, the continuing high level of emphasis on preparing researchers among programs in the medium and low reputational groupings was less expected, particularly when accompanied by relatively low levels of importance assigned to the preparation of college teachers or other practitioners. On the basis of the results described earlier, it was expected that several programs in both history and psychology would emphasize the goal of preparing college teachers, and that a few programs in each field would emphasize the preparation of practitioners. Instead, only the low-rated programs in history assigned more weight to the preparation of teachers than researchers, and only the low-rated psychology departments assigned more weight to the preparation of practitioners than researchers.

Though it is impossible to know for certain why these data do not agree with the perceptions of graduate deans that programs in the humanities and social sciences place as much or more emphasis on the preparation of teachers as researchers (reported in Chapter 1), several possible explanations can be suggested. For instance, it could be that history and psychology are not typical disciplines in these areas of knowledge, although traditionally large numbers of new Ph.D.'s in both fields become college teachers. Also, more emphasis on teaching is reported by the history departments than by chemistry or psychology departments, a fact that is consistent with an expectation for more attention to teaching in the humanities.

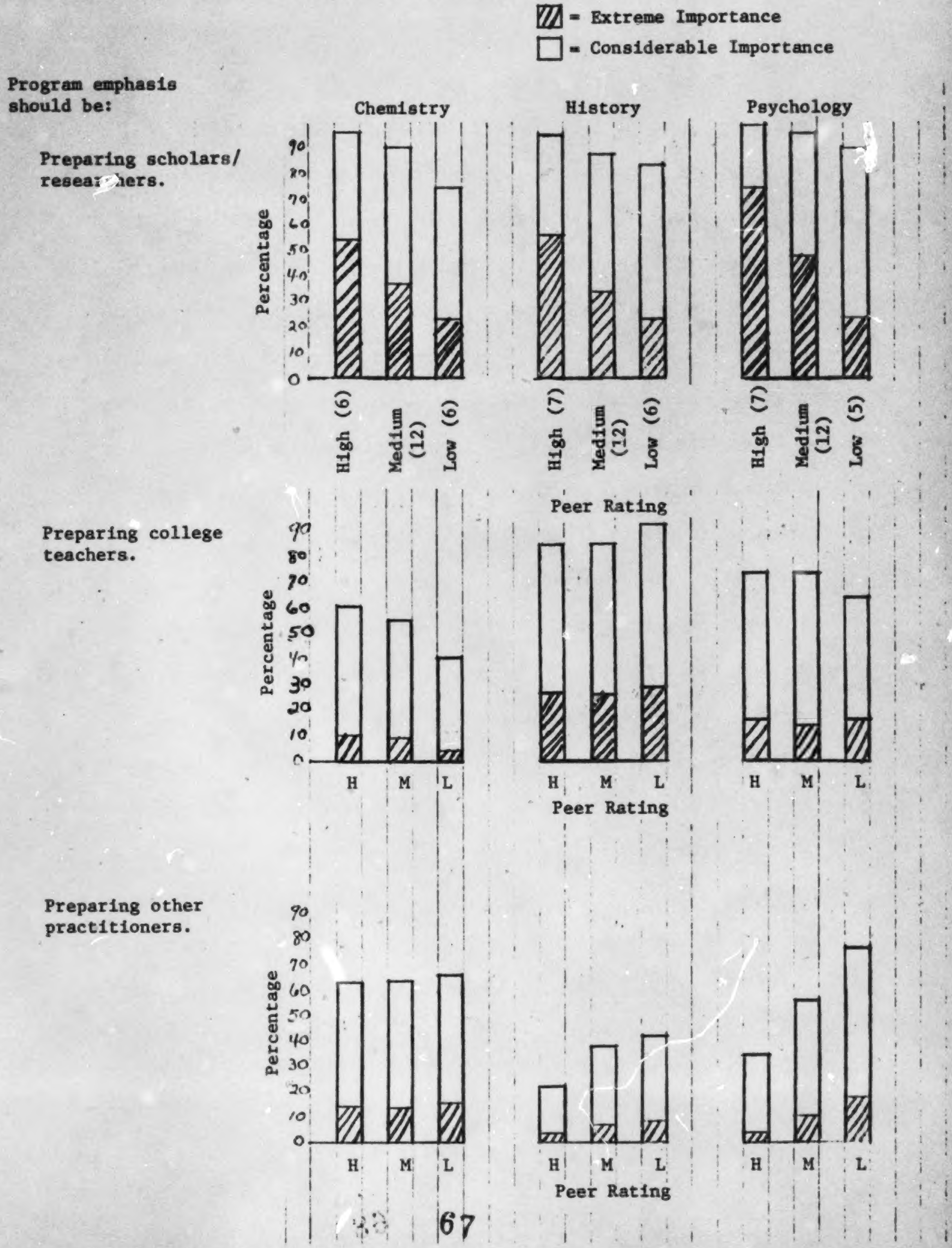
A more likely explanation is that the deans' assessments of program tasks reflected the kinds of postdegree jobs that graduates tend to take rather than the training they received. In contrast, these faculty members may be reporting a lack of specific training for teaching or other professional practice in most of their programs. The lack of particular training for teaching is supported by student responses to the statement, "This department makes a consistent effort to help students become effective teachers." An average of only about 30% of the students in programs in any discipline and any reputational grouping responded affirmatively.

The only exception was low-prestige programs in history, where an average of 64% of the students agreed.

A third possible explanation is that, since these are Ph.D. programs, most faculty members could not bring themselves to denigrate the importance of preparing scholarly researchers even when the program in fact gives only lip service to this goal. This possibility is supported by faculty views of the importance their departments ought to assign each program purpose as reported in Figure 3.2. According to these reports, the very great emphasis on preparing scholars/researchers should be continued in high-prestige programs and should be higher than at present in medium- and low-prestige programs. At the same time, faculty members in all programs in all fields think their programs should place more emphasis on the preparation of teachers and also on the preparation of other practitioners. (Only low-prestige psychology programs are an exception, probably reflecting a desire for slightly less emphasis on the preparation of clinicians.) The desirability of more attention to the preparation of teachers is particularly prevalent in both history and psychology. Some historians also think they should begin to offer some practical training for careers other than teaching.

The differences between the fields are in line with the activities of the alumni of the fields. That is, chemists enter industry as often as they enter academe; historians are mostly employed in colleges and universities; and sizable numbers of the

Figure 3.2
Faculty Estimates of the Importance the Department Ought to Assign to Each Program Purpose



alumni of psychology programs are employed as clinical or industrial psychologists. Alumni responses reported in Chapter 10 confirm that the purposes faculty think should be emphasized are more in line with the employment histories of recent program graduates than are the perceived current program emphases. The data do not answer the question of why more attention to career preparation has not been forthcoming if faculty feel it ought to be part of their programs, but the indications that such changes are perceived to be desirable by a number of faculty members may encourage efforts in this direction.

Separate data are not presented for the student ratings of current program emphases because they are very similar to the faculty results. In fact, students see slightly stronger emphasis on the preparation of researchers in programs at all reputational levels, and slightly less emphasis on the preparation of teachers and practitioners than is reported by the faculty. In terms of their personal goals, the student responses indicate that they endorse the high level of importance they perceive to be assigned to the preparation of researchers, but at the same time they would like to have much more attention given to the preparation of teachers, especially in history. Students in chemistry and history are only moderately interested in more emphasis on the preparation of other practitioners; however, psychology students at all levels would like more practitioner orientation.

The strength of emphasis on research tends to decrease with the decline in prestige of a program, though seldom more than to share importance with one of the other program purposes. This may reflect the interests of a less research-oriented faculty in the lower-rated programs, and also probably reflects some differences in the specializations that are offered. The low-prestige programs tend to be small and to concentrate on one or two specializations rather than the full range offered by the larger and high-prestige programs. They also tend to emphasize the area of each discipline that is most relevant to applied careers: organic chemistry (industrial applications), American history (public school as well as college teaching), and clinical psychology. Average student specializations in the high- and low-reputational groupings show the following contrasts: 31% of the students in high-rated programs and 60% of the students in low-rated programs are in organic chemistry; similar percentages for American history are 31% and 51%; for clinical psychology, the figures are 27% and 46%.

In summary, both faculty members and students in almost all programs in all three disciplines perceive that their programs do and should put major emphasis on the preparation of scholars/researchers. Some programs at every reputational level also give some attention to preparing students for careers as teachers and/or other practitioners. Both faculty and students think this attention to career preparation should be increased considerably, though not with any diminution of attention to the preparation of researchers.

Is-Ought Discrepancy

One view of the congruence of responses to questions concerning current program emphasis and desired emphasis is provided in the previous section. In addition, response discrepancies of individual respondents were computed and summarized for each department. Actual and ideal responses that were identical or that differed by only one position on the five-point scale were considered to be in reasonably good agreement and to reflect general satisfaction with the current emphasis of the program. Differences of two positions or more on the scale were considered to reflect dissatisfaction and a fairly strong desire for more or less emphasis on the particular training purpose.

By the standard outlined in the above paragraph, both students and faculty were well satisfied with their programs' emphasis on training scholars/researchers. Only in low-prestige programs was there any marked dissatisfaction; here, an average of 8% to 17% of the respondents wanted more emphasis on research.

Students, particularly, expressed dissatisfaction with the emphasis currently given by their programs to the preparation of teachers. This dissatisfaction was especially apparent in programs of high and medium prestige, where an average of 25% to 37% of the students reported that their personal goal in this area was not being met by their program (i.e., there was a discrepancy of two positions or more between their assessment of current emphasis and the emphasis they personally would like). Faculty also saw some need to increase the attention given to the preparation of teachers, particularly in psychology (15% in each reputational group).

An average of about 20% to 25% of the students in programs in all groups and disciplines indicated a fairly strong desire for more attention to the preparation of other practitioners. They were joined by about a quarter of the faculty in most history departments, and by smaller proportions of the faculty in the other two fields.

In general, students expressed less satisfaction--more discrepancy--than did faculty members. Only occasional members of either group advocated less emphasis on any current program goal; if changes were desired, both groups were for more of everything.

Compatibility of Different Emphases

The third way of looking at program purposes was to average the faculty or student response scale scores that were reported for each program (5=extreme importance to 1=no importance) and to use the average as an index to represent the program's level of emphasis on a given purpose. Because the faculty and student responses were very similar, and because faculties traditionally determine a program's emphases, the average of the faculty responses was adopted as the index of program purpose for use throughout the remainder of this report.

Table 3.1 presents mean scores, standard deviations, and intercorrelations for average faculty ratings of each program's emphasis on preparing scholars/researchers, college teachers, and other practitioners. The bar graphs earlier in this chapter

Table 3.1

Intercorrelation of Faculty Perceptions of the Purposes of Their Departments

Faculty perceptions of emphasis on:	Correlations			Mean[a]	S.D.
	1	2	3		
1. Preparing scholars/ researchers					
Chemistry	--			4.06	.40
History	--			4.18	.40
Psychology	--			4.31	.55
2. Preparing college teachers					
Chemistry	39	--		3.12	.28
History	-50	--		3.65	.23
Psychology	08	--		3.13	.29
3. Preparing other practitioners					
Chemistry	-29	03	--	3.13	.21
History	-51	46	--	2.22	.49
Psychology	-76	-12	--	3.26	.81

[a] 5=Extreme importance, 4=Considerable importance, 3=Some importance, 2=Little importance, 1=No importance

presented only the percentage of faculty members who checked the high end of the response scale (options 4 and 5); though the average gives equal weight to all responses, the emphasis on the preparation of scholars/researchers continues to be paramount in each of the disciplines, with an average score well above "considerable." The average emphasis on preparing teachers and practitioners is lower ("some") and at about the same level in chemistry and psychology. History came closest to equaling the preparation of scholars with the preparation of teachers (4.18 vs. 3.65), while scoring lowest on the preparation of other practitioners. Mean scores for students are very similar, though slightly higher for emphasis on research in all disciplines and lower on the other two emphases.

The pattern of correlations between the indexes suggests that the preparation of teachers meant something different for historians than for chemists or psychologists. According to these data, in chemistry and psychology the training of teachers does not necessarily go along with the training of researchers, but the two tasks are not perceived to be in conflict. Preparing practitioners, on the other hand, was negatively related to the preparation of researchers in all three fields, and there was a positive relationship between the preparation of teachers and other practitioners only in history. This same pattern of relationships was found when student mean scores on the program emphases were correlated with each other.

Apparently historians interpret the term "preparing college teachers" much more specifically than do chemists or psychologists, and in a way that is more like the chemist's view of preparing graduates for applied careers in industry or the psychologist's view of training clinicians. The primary employers of the most outstanding scholars among new Ph.D.'s in all three disciplines will be the major universities of the country and, therefore, it would not be inappropriate to pay some attention to the preparation of these persons for teaching. However, very few doctoral programs in chemistry or psychology set out to train teachers for continuing careers in undergraduate or community colleges. Some history departments, however, do make a specific effort to train teachers for careers as undergraduate or even secondary school teachers, in addition to preparing scholars/teachers for university positions. This represents a different and less research-oriented kind of training, just as the preparation of clinical psychologists is different from and generally not considered to be consistent with the training of researchers in psychology.

Correlates of Program Purposes

What tends to characterize the departments which place a high or low degree of emphasis on each of these purposes? The answer to this question is important because we need to understand the antecedents and effects of the differences among programs with different purposes and because such information may be useful to programs in which changes in purpose are being considered. Only general patterns of relationships will be reported here, rather than a lot of correlations. The correlations are reported separately for each of the three disciplines. Table 3.2 lists correlations between the faculty indexes of program emphases and selected program descriptors. The measures of these program characteristics are described in detail in later chapters.

Faculty perceptions of their departments' emphases on preparing researchers were related positively and strongly to the research activity and productivity of the faculty, the academic ability and scholarly commitment of the students, the program's emphasis on training scholars rather than craftsmen, the employment of alumni in Ph.D. universities, and both peer- and self-ratings of the scholarly excellence of the program. There is little or no relationship between a program's emphasis on the preparation of researchers and students' views about the quality of teaching in the program or their views about the quality of its environment for learning.

All of these correlates suggest a high degree of correspondence between the emphasis on preparing researchers and the activity and atmosphere of research in the programs. That is, the faculty in departments which emphasize preparing researchers are themselves researchers; the faculty and students in the programs emphasizing this purpose were oriented toward scholarship, and the alumni demonstrated a research orientation in their accomplishments. These programs also tended to be large, well-paying, and well-equipped. However, they were not necessarily congenial or personally very satisfying places for students to study.

Table 3.2

Correlates of Faculty Perceptions of Program Emphases

Variables	Correlations with emphasis on training researchers in[a]			Correlations with emphasis on training teachers in[a]			Correlations with emphasis on training practitioners in[a]		
	C	H	P	C	H	P	C	H	P
1. Faculty research activity (F-Sc #3)[b]	67	76	67	23	-41	41	04	-29	-68
2. Faculty journal articles per year (F-9-a1 and 2)	80	48	37	29	-01	34	-23	-19	-57
3. Student scholarly commitment (F-Sc #4)	78	57	70	34	05	55	-27	-22	-53
4. Percent of alumni employed by Ph.D. universities (A-15-b)	78	60	38	19	-10	22	*	*	*
5. Emphasis on training scholars rather than craftsmen (F-1-o)	73	32	64	48	-12	14	-46	-64	-46
6. Adequacy of physical and financial resources (F-2-x)	63	71	61	36	-27	45	-14	-23	-60
7. Environment for learning (S-Sc #1)	-05	-42	10	31	49	17	25	02	-21
8. Faculty concern for students (S-Sc #4)	-05	-32	28	20	58	36	21	12	-02
9. Quality of teaching (S-Sc #7)	13	-02	61	-05	38	46	12	-11	-52
10. Student-rated scholarly excellence of program (S-Sc #2)	77	42	72	33	11	39	-16	-27	-61
11. Faculty-rated scholarly excellence of program (F-Sc #1)	83	86	76	60	-23	54	-34	-50	-54
12. Alumni-rated excellence of program (A-Sc #2)	74	85	69	51	-11	11	*	*	*
13. Peer-rated quality of the faculty (F-25-a)	87	87	75	34	-59	28	-21	-55	-63

[a] Correlations are within disciplines, based on department means. Disciplines are abbreviated: C = Chemistry (N=24); H = History (N=25); P = Psychology (N=24).

[b] In this table and most subsequent ones in the report, the source of each measure is indicated after the variable label. Individual item numbers from the faculty (F), student (S), alumni (A), or department profile (DP) questionnaires are indicated; copies of the questionnaires are in Appendix D. The items combined to form a scale score (Sc) are listed in Appendix F.

*Not available.

Correlations between emphasis on training college teachers and other program characteristics tend to be somewhat less high than for emphasis on the preparation of researchers, suggesting that there is more variation from program to program. However, there is a pattern of positive association between emphasis on the preparation of college teachers and reports of good relationships between students and faculty in all three disciplines, and a positive association between emphasis on preparing teachers and the research and scholarly orientation of the chemistry and psychology departments, but a negative association with this orientation in history. These findings are consistent with the view expressed earlier that programs to train teachers should be staffed by good teachers who give particular attention to the quality of student-faculty interactions, and that "training teachers" usually is perceived by chemists and psychologists to mean training researchers who may also teach. However, all but the most prestigious history departments tend to train historians specifically for careers in teaching.

Very few program descriptors correlated positively with faculty perception of a program's emphasis on training other practitioners in any of the three disciplines, suggesting that the characteristics of these programs are not very well defined by the variables in the study. Faculty members agreed that these programs placed less emphasis on training scholars than craftsmen, and the students were more likely to have postponed graduate study and begun the programs at a later age. Students and faculty members in the programs as well as professional peers perceive doctoral programs that place great emphasis on preparing graduates for applied positions to be less scholarly than programs with other emphases. The negative relationship is perhaps strongest in psychology, but is characteristic of all three disciplines.

This additional evidence that programs to train professionals for applied careers are not given high ratings on scholarship even by their own participants may be saying that the research excellence of the faculty and the scholarly commitment of students really are not the appropriate criteria for judging these programs. These responses may reflect the position that practitioners, not scholars, are needed to train practitioners; bright students interested in applied problems or service careers may be more appropriate than brilliant students in programs designed to train practitioners. The lack of positive correlates may simply reflect the absence of appropriate questions or options in the data collection.

Implications

The different ways of looking at doctoral program purposes as perceived by faculty members and advanced graduate students--the importance placed on each purpose by the program, satisfaction of the respondent with this emphasis, and the compatibility and correlates of different program purposes--consistently indicated that the major purpose of the programs in this study was perceived to be the preparation of scholars and researchers, with more or less secondary attention to the preparation of college teachers and professionals for other applied practice. The preparation of researchers and teachers was perceived to be compatible in chemistry and psychology, apparently because many faculty members in these fields interpreted "teaching" to mean researchers who may also teach. In history, however, some programs gave specific attention to the preparation of teachers (in contrast to scholars who may also teach). Preparing teachers in history was perceived to be more like the preparation of students for applied careers in the other two disciplines and, therefore, not positively associated with indicators of scholarly excellence.

In summary, it appears that the purpose of training researchers is the only goal given wide recognition by participants in doctoral programs and is the only goal that is well-defined and well-understood within the disciplines as well as consistently related to many aspects of program structure and function. Increased emphasis on the training of practitioners, and on the training of teachers for undergraduate college positions, is perceived to be desirable but not very compatible with the research emphasis. The dilemma of quality vs. diversity is all too apparent (Breneman, 1973; Clark, 1976).

Unfortunately, though this research attempted to be sensitive to differing program purposes, it was not successful in identifying and measuring positive and generalizable characteristics of importance to programs that emphasized the preparation of practitioners. Many of the characteristics that were measured and that are reported in the remainder of this report are most appropriate as descriptors of programs that emphasize the preparation of researchers or researcher-teachers. This is inevitable, given the high level of emphasis assigned to the preparation of researchers by the faculty members of the programs in the study. It means, however, that the few programs that did emphasize the preparation of graduates for applied careers had little chance to indicate their strengths. Information in addition to indicators of scholarly excellence is needed in order to make sound judgments about these programs. Some possible indicators in other areas are suggested in this report; others need to be developed.

Chapter 4

RATINGS OF DEPARTMENTS AS MEASURES OF PROGRAM QUALITY

This chapter examines information regarding the potential usefulness of departmental ratings as indicators of program quality. Two kinds of ratings information are considered. The first is peer-ratings--the ratings of one department or program by people in other doctoral programs within the same discipline. Then self-ratings are examined; that is, ratings of the department by those who are or have been in the department--namely, the faculty, students, and alumni. Both of these kinds of ratings are very general ratings of the quality of departments. The peer ratings in this study, as well as in earlier studies, are ratings of the quality of the faculty in a given department. But they are faculty ratings only in a very general sense, for they do not seek judgments about specific faculty qualities or behaviors, such as quality of teaching, originality of research, adequacy of clinical skills. Similarly, the departmental self-ratings are ratings of the "scholarly excellence" of the program, a quality that is obviously a collection of many distinct characteristics. In effect, then, both sets of ratings examined in this chapter might be termed global ratings of department quality.

In view of the previously expressed reservations about peer ratings, especially when used for individual program evaluation, one might wonder why peer ratings were collected at all. At this point it should be emphasized that our reservations about peer ratings are really reservations about their use as the criterion or exclusive definer of doctoral program quality. As one of many indicators of program quality, however, peer ratings are clearly relevant and deserve attention. They were included in this study for three reasons. First, we wanted to gain a better understanding of peer ratings as one of many indicators of program quality--their reliability, their relationships with other program descriptors, and so on--in the same way that we sought a better understanding of the many other program characteristics explored in this report. Second, we wanted to take advantage of the opportunity to conduct a partial replication of the earlier ACE studies, paying particular attention to the stability of peer ratings over time and across different groups of raters. Third, given the widespread use of and familiarity with the ACE quality ratings, it seemed important to obtain a current similar measure which could be used as a sorting or classification variable in analyzing the data regarding students, faculty members, alumni, and departments.

The last of these three reasons--to use peer ratings as a classification variable in analyzing other indicators of quality--has been discussed in Chapter 2 and utilized in the previous chapter on program purposes. Virtually every chapter examines the relationship of other program information to peer ratings.

The first two reasons cited above--to gain a better understanding of peer ratings and to compare them in several ways with similar data obtained in earlier ACE studies--are explored in this chapter, along with self-ratings information collected from department faculty, students, and alumni. The analyses of these data were guided by six major questions:

(1) To what extent are peer ratings stable over time? (That is, to what extent do the peer ratings in our study agree with those obtained in the most recent ACE study?)

(2) To what extent do certain methodological steps--e.g., eliminating ratings of one's own current department or the department from which the doctorate was earned--affect peer ratings?

(3) How much variation in peer ratings is present across discipline subspecialties within the same doctoral program?

(4) What is the reliability of departmental self-ratings information, as reported by faculty, students, and alumni?

(5) What is the relationship between peer ratings and self-ratings? Do they essentially tell us the same thing? Does this differ by discipline?

(6) What is the relationship between ratings (both peer and self) and other departmental characteristics?

The Nature of the Ratings

The peer ratings were obtained as follows. Each of the 25 universities participating in the survey was listed alphabetically in the faculty questionnaire, and the respondents were asked to rate the quality of the graduate faculty in their field at each listed institution on a scale ranging from "distinguished" to "not sufficient for doctoral training." Respondents were also given the opportunity to indicate that they did not have enough information to provide a rating. Thus, the scale was identical to that used in both the 1964 and 1969 ACE surveys. Respondents were instructed to consider only the scholarly competence and achievements of the present faculty when making their ratings. Respondents were also asked to rate the attractiveness of each doctoral program listed. (For the exact wording of both questions, see item #25 in the faculty questionnaire in Appendix D.)

Self-ratings were obtained by asking three different groups of respondents--faculty, students, and alumni of the department--to rate the department on a variety of characteristics related to the dimension of scholarly excellence. In some instances, respondents were asked to indicate their agreement or disagreement with statements about the department (e.g., "this graduate program is one of the best in the field"), or, in other cases,to rate certain departmental characteristics, such as the scholarship of the faculty, on a scale ranging from excellent to poor. Thus, the self-ratings of the departments are actually composites of ratings of different program characteristics, all of which are related to the concept of scholarly excellence. These separate items were then combined to form a scale score to represent the scholarly excellence of a program. The judgments of faculty, students, and alumni are each represented by a scale on this dimension. Details regarding these scales, including the specific items, the intercorrelation among the items, the scale reliabilities, and so on, are presented in Appendix F. The scholarly excellence scales are Student Scale #2, Faculty Scale #1, and Alumni Scale #2.

The Stability of Peer Ratings

The 1969 ACE study (Roose and Andersen, 1970) compared the reputational ratings data obtained in their survey with those obtained five years earlier (Cartter, 1966). The ratings were strikingly similar in practically every field. Of the 29 fields that were included in both studies, the correlation between quality ratings exceeded .90 in 26 cases and was below .80 in only one instance (.79 for Pharmacology).

We were able to compare the mean ratings of the programs in our study with those obtained in the 1969 study.[1] These data are presented in Table 4.1 and offer clear evidence that, in general, ratings of faculty quality are extremely stable over time. The new ratings consist of ratings by all faculty questionnaire respondents from each of 25 universities in the study, who were asked to rate only programs in those 25 universities. The ACE data were collected from a smaller number of faculty members at a much larger number of universities, who rated almost every Ph.D.-granting program in their field. In this respect, the ratings obtained from the two studies are not

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[1] We would like to take this opportunity to thank Charles Andersen of the American Council on Education for making the 1969 ratings data available to us for this analysis.

Table 4.1

Comparison of Quality of Faculty Rankings Between 1975 ETS Study and 1969 ACE Study

	Chemistry Rankings:				History Rankings:				Psychology Rankings:		
Dept[a]	1975 (ETS)	1969 (ACE)	Diff.	Dept[a]	1975 (ETS)	1969 (ACE)	Diff.	Dept[a]	1975 (ETS)	1969 (ACE)	Diff.
P	1	1	-	P	1	1	-	U	1	1	-
U	2	2	-	Q	2	2	-	M	2	2	-
T	3	4	+1	U	3	4	+1	P	3	3	-
W	4	3	-1	M	4	5	+1	G	4	6	+2
Q	5	5	-	T	5	3	-2	T	5	5	-
F	6	6	-	W	6	6	-	W	6	7	+1
M	7	9	+2	D	7	8.5	+1.5	D	7	4	-3
E	8	8	-	G	8	10	+2	Q	8	12	+4
G	9	7	-2	F	9	7	-2	X	9	8	-1
D	10	12.5	+2.5	E	10	8.5	-1.5	E	10	9	-1
Y	11	14	+3	N	11	11	-	F	11	10	-1
X	12	11	-1	K	12	12	-	N	12	11	-1
V	13	10	-3	C	13	15	+2	K	13	13	-
I	14	15	+1	B	14	14	-	B	14	15	+1
B	15	12.5	-2.5	L	15	13	-2	A	15	19	+4
N	16	17	+1	A	16	18	+2	V	16	14	-2
A	17	18	+1	X	17	16.5	-0.5	C	17	17	-
O	18	16	-2	O	18	16.5	-1.5	L	18	18	-
K	19	19	-	V	19	19	-	Y	19	16	-3
C	20	21	+1	Y	20	20	-	H	20	22	+2
L	21	20	-1	H	21	21	-	O	21	20	-1
J	22	22	-					J	22	21	-1
H	23	23	-								
	RHO = .99				RHO = .99				RHO = .98		

[a] Identification letters were assigned randomly to each university in the study. No university or program is identified by name in this report.

Note: Some departments included in the 1975 study were not rated in the 1969 ACE survey. For these departments a comparison was therefore not possible. As a result, the number of departments compared are as follows: Chemistry = 23, History = 21, and Psychology = 22.

procedurally identical. Nonetheless, the ranking of programs which were rated in both studies is changed only slightly, as indicated by the high rank order (rho) correlations. In chemistry, where the correlation between the 1969 ACE ratings and the current ETS ratings was .99, one department's rating was three ranks higher in the current study than in 1969 (Department Y), another's mean rating was three ranks lower (Department V), and all others were either identical or within one or two ranks. In history, where the correlation between ratings was also .99, no department's rating changed its ranking by more than two places in either direction. In psychology, where the correlation between ratings was .98, Departments Q and A improved their rankings by four places, the rankings of Departments D and Y decreased by three places, and all other rankings were either identical or within one or two ranks. Thus, even though the overall agreement among program rankings over the six-year span is dramatic, it can be seen that there were several sizable individual program shifts. Although reputational ratings are definitely stable enough over different raters and over time to permit us to be confident that they are reliable, at the same time the data clearly suggest that there are some changes in the ratings of individual programs.

Program Quality vs. Program Attractiveness

Both of the ACE surveys asked faculty respondents to rate two separate aspects of graduate programs: the quality of the faculty and the attractiveness of the doctoral program.[2] In both studies, the similarity in data obtained from the two questions is very high. For each of the 36 disciplines included in the 1969 study, the correlations between faculty quality ratings and program attractiveness ratings are either .98 or .99. The relationship between the two questions was also high for data obtained in the 1964 survey, though no correlations were reported.

As reported in Table 4.2, the relationship between the faculty quality ratings and the program attractiveness ratings obtained in the current study was also very strong. The correlations, reported at the bottom of the table, are .99 for all three disciplines. In chemistry, only one department's ranking was different by more than one place on the two ratings (Department X, whose attractiveness rating was two ranks higher). In history, the ranks of three departments differed by three places (Departments C, B, and L), and in psychology, Department T received an attractiveness rating that was four ranks lower than the rating of the quality of its faculty. In the great majority of cases in all three fields, however, the

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[2] Actually, the instructions to respondents in both ACE surveys indicated that they were to rate the effectiveness of the doctoral program, and in fact effectiveness is the word both reports use when referring to the data. However, the response options on both questionnaires were actually different points on an attractiveness scale (ranging from "extremely attractive" to "not attractive"). For this reason, and the feeling that raters would often have no basis for judging a program's effectiveness but could offer their own impressions of its attractiveness, we opted for attractiveness as the more appropriate and meaningful of the two concepts. For the specific wording of instructions to respondents, see item #25 in the Faculty Questionnaire in Appendix D.

Table 4.2

Comparison of Rankings of Quality of Faculty with Attractiveness of Doctoral Program (1975 ETS Ratings)

	Chemistry				History				Psychology		
	Rankings:				Rankings:				Rankings:		
Dept.	Quality of Faculty	Attractiveness of Program	Difference	Dept.	Quality of Faculty	Attractiveness of Program	Difference	Dept.	Quality of Faculty	Attractiveness of Program	Difference
P	1	1	-	P	1	1	-	U	1	1	-
U	2	2	-	Q	2	2	-	M	2	2	-
T	3	3	-	U	3	3	-	P	3	4	1
W	4	4	-	M	4	4	-	G	4	3	1
Q	5	5	-	T	5	5	-	T	5	9	4
F	6	6	-	W	6	7	1	W	6	5	1
M	7	8	1	D	7	6	1	D	7	6	1
E	8	7	1	G	8	8	-	Q	8	8	-
G	9	9	-	F	9	10	1	X	9	7	2
D	10	11	1	E	10	9	1	E	10	11	1
Y	11	12	1	N	11	11	-	F	11	10	1
X	12	10	2	K	12	12	-	N	12	12	-
V	13	13	-	C	13	16	3	K	13	14	1
I	14	14	-	B	14	17	3	B	14	13	1
B	15	15	-	I	15	14	1	I	15	15	-
N	16	17	1	L	16	13	3	A	16	16	-
A	17	16	1	A	17	15	2	V	17	18	1
O	18	18	-	X	18	18	-	C	18	20	2
K	19	19	-	O	19	19	-	L	19	17	2
C	20	21	1	S	20	20	-	Y	20	19	1
L	21	20	1	V	21	21	-	S	21	21	-
J	22	22	-	Y	22	22	-	H	22	22	-
S	23	23	-	J	23	23	-	O	23	23	-
H	24	24	-	R	24	24	-	J	24	24	-
R	25	25	-	H	25	25	-	R	25	25	-
	RHO = .99				RHO = .99				RHO = .99		

rankings based on attractiveness ratings were either identical with or within one rank of the rankings based on ratings of the quality of the faculty.

It would therefore appear that the raters were either unable to distinguish between the quality of a program's faculty and its attractiveness for graduate students, or, more likely, that they were able to see the conceptual distinction but simply felt that the most important single factor in determining a program's attractiveness for students is the quality of the graduate faculty. In either case, the data suggest that only one of the two measures is necessary. For most of the analyses in this report that have to do with peer ratings, we have chosen to use ratings of the quality of the faculty.

The Effects of Including Ratings of One's Own Department

In making their ratings of the quality of the faculty in programs in this study, respondents were instructed to rate the faculty in their field at each of the 25 institutions listed. These 25 departments obviously included the department in which raters were currently employed and, also, the department from which some raters had earned a doctorate. An important question, then, is the effect of these ratings on the overall ratings of the programs. Data relevant to this question are presented in Table 4.3. In this table the mean ratings for each of the 25 departments in each of the three disciplines are given for three different rating conditions: (1) those which exclude ratings of both one's current employing department and the department from which the doctorate was earned

Table 4.3

Comparison of Ratings of Quality of Faculty When Current Employing Department and/or Department from Which Doctorate was Earned Are Excluded

	Chemistry				History				Psychology		
	1^a	2^b	3^c		1^a	2^b	3^c		1^a	2^b	3^c
Dept.				Dept.				Dept.			
P	4.80	4.82	4.83	P	4.66	4.67	4.69	U	4.62	4.64	4.65
U	4.68	4.69	4.70	Q	4.46	4.46	4.47	M	4.42	4.45	4.48
T	4.23	4.25	4.29	U	4.43	4.43	4.45	P	4.14	4.14	4.16
W	4.12	4.17	4.19	M	4.29	4.31	4.32	G	4.08	4.09	4.11
Q	3.89	3.88	3.88	T	4.17	4.19	4.21	T	3.87	3.89	3.89
F	3.59	3.62	3.66	W	3.79	3.81	3.85	W	3.88	3.88	3.92
M	3.47	3.47	3.47	D	3.67	3.67	3.69	D	3.82	3.84	3.87
E	3.45	3.46	3.48	G	3.45	3.45	3.47	Q	3.60	3.60	3.60
G	3.32	3.33	3.30	F	3.43	3.44	3.46	X	3.53	3.54	3.58
D	3.08	3.08	3.08	E	3.41	3.43	3.46	E	3.50	3.52	3.56
Y	3.01	3.01	3.06	N	2.98	2.98	3.04	F	3.40	3.42	3.45
X	2.99	3.00	3.02	K	2.89	2.89	2.91	N	3.01	3.02	3.04
V	2.85	2.86	2.93	C	2.53	2.54	2.58	K	2.90	2.91	2.95
I	2.72	2.72	2.77	B	2.46	2.47	2.56*	B	2.82	2.83	2.90
B	2.55	2.56	2.59	I	2.46	2.47	2.56*	I	2.53	2.53	2.56
N	2.55	2.55	2.56	L	2.41	2.41	2.47	A	2.47	2.47	2.54
A	2.50	2.50	2.52	A	2.33	2.33	2.39	V	2.42	2.42	2.55*
O	2.36	2.36	2.45	X	2.14	2.15	2.20	C	2.39	2.39	2.43
K	2.18	2.18	2.21	O	2.14	2.14	2.18	L	2.34	2.34	2.41
C	1.86	1.86	1.88	S	1.66	1.66	1.70	Y	2.25	2.27	2.32
L	1.78	1.78	1.80	V	1.39	1.40	1.54*	S	1.89	1.89	1.94
J	1.67	1.67	1.70	Y	1.30	1.30	1.38	H	1.65	1.65	1.79*
S	1.43	1.43	1.48	J	1.18	1.18	1.28*	O	1.64	1.65	1.76*
H	1.42	1.42	1.42	R	1.04	1.04	1.11	J	1.51	1.51	1.54
R	1.02	1.02	1.09	H	0.90	0.90	1.02*	R	1.14	1.14	1.20
Mean	2.86	2.87	2.89		2.78	2.78	2.83		2.95	2.96	3.00

[a] First column of ratings within each discipline are "clean" ratings; that is, ratings which exclude both current employing department and department from which doctorate was earned.

[b] Second column of ratings within each discipline include department from which doctorate was earned, but exclude current employing department.

[c] Third column of ratings within each discipline include both department from which doctorate was earned and current employing department.

*These departments are ones for which there is a difference of .10 or greater between cols. 1 and 2, 1 and 3, or 2 and 3. See text for elaboration.

(in the first column under each discipline), (2) ratings which exclude current employing department but include department from which doctorate was earned (in column two), and (3) ratings which include both current employing department and the department from which the doctorate was earned. The ratings are based on a six point scale ranging from zero (not sufficient to award a doctorate) to five (distinguished).

It is apparent from Table 4.3 that whether one's current department or the department from which the doctorate was earned are removed from or included in the analysis makes little difference on either the absolute ratings (the means) or the relative rankings of programs. Across all 25 departments, the means of the ratings in chemistry vary by only .03, from 2.86 when both current and degree-granting departments are excluded to 2.89 when neither is excluded. The range in means across these three ratings conditions is somewhat greater in history (from 2.78 to 2.83) and psychology (2.95 to 3.00), but in none of the three disciplines is the difference very large. With respect to individual programs, not one chemistry program mean varied by more than .09 across the three rating conditions. In history, five program means varied by .10 or more (Departments B, I, V, J, and H), and in psychology three department means varied by this amount (Departments V, H, and O).

Note that the five history departments with any appreciable variation in means across the ratings conditions and the three psychology departments with any appreciable variation are all departments whose ratings tend toward the lower end of the ratings distribution. In other words, faculty members at departments with the lower peer ratings tend to rate their own department faculty slightly higher than do their peers in other departments, whereas the self-ratings of faculty in highly rated programs are virtually identical with those of their peers in other programs. It is also interesting to note that the mean of the ratings of psychologists is the highest among the three disciplines, followed by the ratings of chemists and historians, in that order.

We have already indicated that ratings under each of the three conditions are very similar. Still, of the two possible sources of bias in the ratings--including the department from which the degree was earned and including the raters' current employing department--it would appear that the latter source of bias is of more concern. The ratings that exclude both current and degree-granting departments (in Column 1 in Table 4.3) are virtually identical with the ratings that exclude only the current employing department (in Column 2). It is only when the ratings include the raters' current employing department (Column 3) that differences are observed. Consequently, throughout this report our analyses of peer ratings will refer to ratings that exclude the current employing department, but include ratings of the department from which the doctorate was earned.

The Problem of "Blind" Ratings

One of the criticisms of peer ratings is that many of those making the ratings are not sufficiently familiar with many of the programs to be able to make more than a stereotyped guess about the quality of the faculty. The request for ratings of the quality of the faculty at the various departments in the study gave each respondent the option of indicating that he or she did not have enough information about a department to offer a rating. Mean quality ratings were then based only on the responses of those who made a rating and who therefore presumably felt that they had enough information about the department to make a judgment.

Information about the relationship between peer quality ratings and the number of raters is presented in Table 4.4, where departments are listed in the order of the rated quality of their faculty. As one would expect, the number of raters is largest for the departments with the highest ratings and smallest for the departments with the lowest ratings in all three fields. The number of raters ranged from 439 to 241 in chemistry (for Departments U and R), 482 to 196 to history (for Departments P and H), and 501 to 186 in psychology (for Departments U and R). In all three fields the top 10 or 12 departments were rated by 400 or more respondents, but thereafter the number of informed raters drops off rapidly.

These data make it clear that a large number of raters refused to rate departments when they felt that they did not have sufficient information to do so. The much smaller number of raters for the

Table 4.4

Number of Raters of Quality of Doctoral Program Faculty in Order of Department's Mean Rating

Chemistry				History				Psychology			
Dept	Rank	Number of raters[a]	S.D. of ratings	Dept	Rank	Number of raters	S.D. of ratings	Dept	Rank	Number of raters	S.D. of ratings
P	1	430	0.51	P	1	482	0.59	U	1	501	0.72
U	2	439	0.62	Q	2	465	0.73	M	2	474	0.73
T	3	422	0.67	U	3	474	0.70	P	3	495	0.84
W	4	424	0.72	M	4	466	0.73	G	4	447	0.80
Q	5	420	0.80	T	5	476	0.80	T	5	482	0.82
F	6	409	0.78	W	6	447	0.82	W	6	455	0.82
M	7	415	0.77	D	7	443	0.81	D	7	451	0.89
E	8	416	0.72	G	8	422	0.86	Q	8	445	0.92
G	9	410	0.75	F	9	430	0.88	X	9	454	0.87
D	10	400	0.77	E	10	430	0.92	E	10	435	0.84
Y	11	354	0.85	N	11	367	0.93	F	11	439	0.87
X	12	397	0.76	K	12	351	0.95	N	12	418	0.94
V	13	350	0.87	C	13	325	0.91	K	13	369	0.93
I	14	350	0.80	B	14	326	0.95	B	14	386	0.91
B	15	366	0.76	I	15	343	1.04	I	15	317	1.03
N	16	365	0.88	L	16	292	0.99	A	16	352	0.84
A	17	348	0.81	A	17	339	1.05	V	17	291	0.94
O	18	321	0.78	X	18	325	0.95	C	18	347	0.84
K	19	298	0.92	O	19	297	1.06	L	19	307	0.87
C	20	323	0.78	S	20	239	1.11	Y	20	309	0.92
L	21	276	0.91	V	21	235	1.11	S	21	216	0.96
J	22	308	0.80	Y	22	230	1.04	H	22	220	0.93
S	23	256	0.86	J	23	228	0.97	O	23	224	0.80
H	24	248	0.80	R	24	213	1.03	J	24	227	0.80
R	25	241	0.80	H	25	196	0.92	R	25	186	0.81

[a] Number of raters does not include those rating their own department. See Table 2.4 for total number of respondents in each discipline.

lower-rated departments suggests this kind of meaningful distinction. At the same time, the total number of ratings for these departments is sufficiently large to provide a reliable mean rating. Note that the standard deviation of the ratings--that is, the tendency for the ratings to vary--was not consistently greater for the departments with the smallest number of raters than it was for departments with the largest number of raters. Naturally, when ratings are based on very small numbers, concern about these matters is justified. In this case, however, there appear to have been enough raters of even the least prestigious departments to warrant a confident judgment that the ratings are very stable.

Program Subspecialty Ratings

In spite of the many studies that have been conducted on the reputations of academic departments in graduate education, we were familiar with no previous attempts to examine the reputational ratings of departmental subspecialties. The frequently referenced ACE studies asked respondents to rate departmental quality, giving no attention to the possible variation of quality among the various subspecialties within academic departments.[3] Since all faculty members in the subject programs were invited to make ratings in this project, providing a large and heterogeneous group of raters, we decided to obtain faculty ratings of subspecialties within departments as well as of total departments. Our purpose was to examine the extent to which the reputational ratings of within-department subspecialties varied and, accordingly, the extent to which the more general peer ratings are summaries based on heterogeneous or homogeneous within-department reputations.

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[3] The 1964 ACE study (Cartter, 1966) did examine total program ratings in English departments separately by raters whose areas of specialization were American Literature and British Literature, but the subspecialties themselves were not rated.

The faculty questionnaire asked respondents to indicate their discipline and the one subspecialty with which they identified most closely. The number of subspecialties varied by discipline (see item #24 on page 7 of the faculty questionnaire in Appendix D). Then respondents were asked to rate both the quality of the faculty and the attractiveness of the program of their own subspecialty at the 25 universities in the study. The format of the requested ratings was the same as that used for the overall program ratings, with the faculty of subspecialties rated as being distinguished, strong, good, adequate, marginal, or not sufficient to offer doctoral training. Respondents were also given the opportunity to indicate that they did not have enough information about a subspecialty to make a rating. Insufficient information presumably was also the appropriate response if the subspecialty was not offered by a particular program.

The subspecialty ratings data are summarized in Table 4.5. The first thing that is apparent from the ratings of faculty quality in subspecialties is that, like the ratings of all faculty in a program, they are very highly correlated with ratings of program attractiveness. As reported in Column 4, the lowest correlation between

Table 4.5

Correlations of Subspecialty Peer Ratings of Faculty Quality with Other Reputational Ratings Data

		Correlations of subspecialization faculty ratings with:		
	(1)	(2)	(3)	(4)
Subspecialties	Range in number of raters[a]	Ratings of all faculty in dept.	Number of raters	Subspecialization attractiveness ratings
Chemistry:				
(2) Analytical	15-33	40	73	95
(3) Biochemical	11-39	94	22	99
(4) Inorganic	35-63	94	48	99
(5) Organic	80-121	98	39	99
(6) Physical	70-151	98	55	99
History:				
(2) Ancient	8-23	94	32	97
(3) Medieval	15-35	91	73	98
(4) Modern	52-131	99	48	99
(5) American	75-169	98	15	99
(6) Third-World	24-68	95	80	98
Psychology:				
(2) Educational	1-4	79	18	88
(3) Measurement	1-6	91	22	97
(4) Personality	6-19	88	66	97
(5) Developmental	9-40	85	35	99
(6) Experimental	64-168	98	45	99
(7) Organizational	7-18	54	77	97
(8) Clinical	26-97	78	50	95
(9) Social	21-72	88	63	99

[a] Refers to greatest and smallest number of raters for the department or subspecialty. Thus, for example, the biochemistry subspecialty at one department was rated by only 11 raters, whereas in another department that same subspecialty was rated by 39 raters.

subspecialty faculty quality and program attractiveness was .88 (for Educational Psychology).

It was also true of all subspecialties that quality ratings were higher when there were larger numbers of raters (note consistently positive correlations in Column 3). This simply means that programs which received lower subspecialty ratings tended to be the lesser-known departments that were rated by fewer people, whereas departments with subspecialties rated by most respondents tended to be better-known and more prestigious. The extent to which this was true varied among subspecialties, but was nevertheless true for all.

With respect to the correlations between overall ratings of program faculties and ratings of subspecialty faculties, these are reported in Column 2. In history, all subspecialty faculties were rated in very much the same way as the total program faculties were rated, as evidenced by the fact that all intercorrelations exceed .90. In the eyes of historians, then, subspecialty faculties that receive high quality ratings are virtually always found in departments with strong overall faculties. In chemistry departments a high relationship between subspecialty faculty ratings is also the usual case, but there is one glaring exception--analytical chemistry. Although there is a tendency for the more highly regarded analytical chemistry programs to be found in the higher-ranked chemistry departments, as evidenced by the positive .40 correlation between the total faculty rating and the rating of analytical faculties, obviously there are some notable exceptions to this general pattern in this field. There are also exceptions for Organizational Psychology.

Taken together the data in Table 4.5 do not make a very good case for attempting to improve the precision of total program ratings by including subspecialty ratings. As already discussed, the correlations between subspecialty ratings and total department ratings are generally very high--in most cases so high as to make the separate ratings unnecessary. Beyond this, however, there are several logistical difficulties inherent in subspecialty ratings that make the procedure even more questionable. First, there is the problem of the number of raters. As shown by the data in the first column of Table 4.5, certain subspecialties received ratings by only a very limited number of respondents. In psychology, for example, the Educational and Measurement subspecialties of some departments were given only one rating. Other subspecialties were also given ratings by a very small number of respondents, sometimes because there simply were not many faculty members who identified themselves with the subspecialty, sometimes because those in the same subspecialty did not feel that they knew enough about subspecialty faculties at some of the other universities. In addition, there is the problem of the effect of departmental "halo" on the subspecialty ratings. Probably some subspecialty ratings were simply extensions of total department ratings. That this occurred is suggested by the fact that some departments received ratings for subspecialties that were not available in their departments.

The Relationship Between Self-Ratings and Peer Ratings

As indicated earlier in this chapter, self ratings information was also obtained from faculty, students, and alumni of each department. Various questionnaire items having to do with perceptions of the program's scholarly excellence were combined to form three scales, one for each group of respondents. Items included ratings of faculty and student scholarship and research excellence, student originality and commitment, and the degree to which the department was a stimulating place in which to study. (Again, for information about the specific items in these three scales, see Student Scale #2, Faculty Scale #1, and Alumni Scale #2, all in Appendix F.)

Table 4.6 presents the intercorrelations between these three self-rating scales and correlations of the scales with the peer ratings. Note, first of all, that each of the three self-rating scales is fairly highly correlated with the other two self-rating scales. In chemistry, for example, student ratings of scholarly excellence of programs correlates .84 with program scholarly excellence as perceived by the faculty, and .78 with scholarly excellence as perceived by the alumni. (Intercorrelations among the three self-rating scales are enclosed in the broken-line triangle in Table 4.6.) In general, these correlations indicate a fairly high degree of agreement between the self-ratings of faculty, students, and alumni. The lowest agreement is found in history, where the perceptions of the faculty and alumni agree more with each other than either one does with the perceptions of students.

Table 4.6

Intercorrelations Among Four Global Indicators
of Program Quality

Indicator		Correlations				Mean	S.D.
		1	2	3	4		
1. Student-rated scholarly excellence of program	C	--				2.79[a]	.25
	H	--				2.89	.25
	P	--				2.93	.35
2. Faculty-rated scholarly excellence of program	C	84	--			2.65[a]	.42
	H	54	--			2.86	.27
	P	79	--			2.88	.34
3. Alumni-rated scholarly excellence of program	C	78	84	--		3.14[a]	.39
	H	62	72	--		3.26	.40
	P	73	75	--		3.33	.30
4. Peer ratings of quality of faculty	C	67	71	78	--	2.86[b]	1.03
	H	47	82	74	--	2.79	1.14
	P	76	78	89	--	2.94	.98

Note: C = Chemistry (N=24 programs)
H = History (N = 25 programs)
P = Psychology (N = 24 programs)

[a] 4=Excellent, 3=Good, 2=Fair

[b] 5=Distinguished, 4=Strong, 3=Good, 2=Adequate

Besides the fact that self-ratings of these three groups tend to be in general agreement, the other important fact in Table 4.6 is that all three self-ratings tend to be fairly highly related to peer ratings. That is, the opinions of the faculty, students, and alumni within a given department in general correspond to the opinion of that same department as held by faculty in the same discipline at other institutions. Not surprisingly, the degree of this agreement is lowest for student ratings, where the correlations with peer ratings are .67, .47, and .76 in chemistry, history, and psychology respectively. As a rule, there is less agreement about program ratings--both self- and peer-ratings--in history departments. The ratings among historians tend to agree, but not so closely as the ratings of those in the other two disciplines.

The Relationship Between Ratings and Other Program Characteristics

How do program ratings--both peer-ratings and self-ratings--correlate with other program characteristics? The answer to this question is extremely important, for it has enormous implications for the evaluation of doctoral program quality. If, for example, program ratings--peer-ratings or self-ratings--are consistently and very strongly associated with characteristics that are generally accepted as reasonable indicators of program quality, then there would be a convincing case for heavy reliance on ratings information in making summative judgments about the overall quality of a doctoral program.

We examined the relationship of ratings to several departmental characteristics that have often been cited as reasonable indicators of quality and have received previous attention in the research literature. In addition, however, we wanted to see how ratings information was related to several "nontraditional" indicators of program quality--characteristics of doctoral programs that a national panel of graduate deans believed to be important quality indicators, but which, to our knowledge, have not previously been examined in any systematic way. Correlations of ratings with a few traditional and nontraditional indicators of doctoral program quality are summarized in Table 4.7. Note that the index of self-rating chosen for this analysis is the faculty self-rating of program scholarly excellence.

Several interesting findings emerge from the correlations reported in Table 4.7. First, it is clear that peer ratings (given in the first of the two columns under each discipline) are rather highly correlated with several traditional indicators of doctoral program quality. In this respect, the findings confirm those reported in numerous other studies (e.g., Beyer & Snipper, 1974; Elton & Rose, 1972; Hagstrom, 1971; National Science Board, 1969). Furthermore, the peer ratings are more highly correlated with the traditional indicators than are the faculty self-ratings (in the second column). Thus, to the extent that these traditional characteristics define program quality, it would appear that peer ratings constitute a fairly valid measure of overall program quality, and a somewhat more valid measure than faculty self-ratings.

Table 4.7

Correlations of Peer Ratings and Faculty Self-Ratings with Various Other Indicators of Program Quality

	Chemistry		History		Psychology	
	Peer Rating	Self-Rating	Peer Rating	Self-Rating	Peer Rating	Self-Rating
Traditional Characteristics:						
Size (FTE students)	84	68	68	55	60	45
Faculty publications (last 3 years)	90	68	50	27	47	43
Faculty research activity (F-scale 3)	73	61	78	62	86	69
Percentage of faculty with Ph.D. from "leading" institutions (F-15)[a]	68	60	74	59	80	53
Selectivity[b]	24	30	70	71	-21	-29
Nontraditional Characteristics:						
Environment for learning (S-scale #1)	-13	17	-48	-21	02	30
Quality of teaching (S-scale #7)	09	24	00	13	52	72
Excellent career preparation (Alumni, A-4-abc)	58	66	-05	05	39	47

[a] "Leading" institution refers to programs with peer ratings of 3.0 ("good").

[b] Ratio of number of students applying to number admitted.

However, though the correlations with these traditional indicators tend to be fairly high, it is important to note that peer ratings and self-ratings are not correlated equally highly with all of the traditional indicators of program quality across all three disciplines. Peer ratings are very highly correlated with publications in chemistry, for example, but the relationship is not particularly high in history or psychology. And student selectivity is fairly highly correlated with peer ratings in history, but not highly correlated in chemistry and psychology--where, in fact, there are slight negative correlations.

When we examine a few characteristics of doctoral programs that usually are not measured--characteristics, it is worth repeating, that graduate deans indicated are important ones to consider in making judgments about doctoral program quality--it is clear that quality ratings simply do not correlate in any consistent way. Self-ratings are fairly highly related to quality of teaching in psychology, but not at all in history; neither form of rating is highly related to the department's environment for learning (where there are even some negative correlations). Whereas peer ratings were consistently more highly correlated with traditional research-oriented characteristics than were self-ratings, the opposite seems to be the case for the nontraditional characteristics. However, neither form of rating is very highly correlated with the nontraditional indicators.

Summary of Findings Regarding Program Ratings

The focus of this chapter was on global ratings of graduate program quality, including ratings made by those in the same disciplines at other universities (peer ratings) as well as ratings by faculty, students, and alumni within the department (self-ratings). The purposes of the chapter were to examine several methodological questions with respect to peer ratings (e.g., their stability, whether to exclude the raters' own departments when calculating ratings, etc.), to examine the relationship between peer ratings and self-ratings, to consider evidence related to the "validity" of ratings information, and to offer judgments about the appropriateness of ratings information as an indicator of doctoral program quality.

The basic findings of this chapter are these:

--Peer ratings are quite stable over time. The relative rankings of the 25 departments in this study were very similar to the rankings of these same departments based on data gathered six years earlier.

--Nevertheless, peer ratings do appear to be sensitive to some changes in individual departments. Though the overall rankings were quite similar, shifts of three or four ranks did occur for some departments.

--Peer ratings of the quality of a department's faculty are so highly correlated with peer ratings of the attractiveness of a doctoral program that very little information seems to be added by including a rating of program attractiveness.

--In obtaining peer ratings, it seems to make little difference whether the raters' current employing departments or the departments from which the raters earned their doctorate are excluded from the ratings. Neither the absolute ratings nor the relative rankings of programs appear to be affected to any extent by this logistical question.

--Rating program subspecialties does not appear to be a very promising alternative. Most subspecialty ratings are very highly correlated with total program ratings and thus provide very little additional information. Furthermore, there are few potential raters in some subspecialties, and the lack of familiarity with a number of programs results in so few ratings that one must be concerned about their reliability.

--Self-ratings of the scholarly excellence of a program by faculty, students, and alumni are in general agreement, though the extent of agreement is not as high in history as it is in the other two disciplines. All three kinds of self-ratings correspond fairly closely with peer ratings. External judges and those within departments seem to be in general agreement about the academic excellence of the faculty and related program elements.

--Both kinds of quality ratings are highly related to program emphasis on preparing scholars/researchers, program size, and the training and research involvement of faculty. Peer ratings are somewhat more highly correlated with traditional, research-oriented indicators of program quality than are self-ratings, which appear to be somewhat more highly related to less traditional program characteristics.

--Indicators of a number of other program characteristics provide information about the quality of a program that is not conveyed by peer ratings.

Chapter 5

FACULTY TRAINING AND PERFORMANCE

Discussion in the previous chapter concerning peer ratings of the quality of graduate faculties is only one of many indications that the characteristics of a program's faculty are among the most important indicators of a program's quality. Particularly at the doctoral level, it is often literally true that the faculty members are the program: students enroll to study with leading scholars in their special areas of interest, the faculty act as mentors as well as granters of degrees, and they produce new knowledge that advances the discipline while it also increases professional awareness of the department. Peer ratings of faculty quality are one way to measure this dimension. In addition, this study assessed several more specific characteristics of department faculties by averaging self-reports from members of the faculty and ratings from their advanced graduate students.

The assessment of faculty characteristics concentrated on three general areas: (1) the training, knowledge, and skill that faculty members brought to the task of doctoral education in a particular program; (2) the quality of the teaching by a program's faculty; and (3) the scholarly activity, research productivity, and professional contribution of a department's faculty members. Measures of indicators in each of these areas will be reviewed in the first part of this chapter, and a report of the ways in which they relate to one another and to a variety of program characteristics will follow.

Training and Ability

A brief profile of the backgrounds of faculty members who completed questionnaires for this study will be found in Appendix E. Almost all of the faculty members in every program (96% to 99%) reported an earned Ph.D. degree. An average of 70% to 80% of the faculty members in each program in all three disciplines had been rewarded by promotion to associate or full professor and held a tenured appointment. A majority had more than 10 years of teaching experience. All of these characteristics of faculty members are possible indicators of their scholarly training and skill, and one would want to inquire about them when evaluating a doctoral program, but none of them offered sufficient variability to be very useful as a program descriptor in this study.

Three possible measures of the degree origins of members of the faculty were investigated. Faculty questionnaire respondents indicated the university from which they received their highest degree, and the 1969 ACE ratings of the quality of the graduate faculty in the appropriate field were assigned to each respondent. Three scores were then computed for each program: (1) the average peer rating of programs from which faculty members received their highest degrees; (2) the percent of faculty who received doctorates from "leading institutions" in their field (peer rating 3.0 or above in Roose and Andersen, 1970); and (3) the percent of faculty who received doctorates from the most prestigeous programs (peer ratings 3.5 or above). Table 5.1 gives the means, standard deviations, and intercorrelations of these items. Most faculty members (an average 87% in chemistry departments, 86% in history departments, and 73% in psychology departments) received their highest degree from a "leading institution" in their field. These results are consistent with the very strong emphasis on the training of researchers and scholar/teachers in the top prestige programs, discussed in Chapter 3, and with the tendency for graduates of top prestige programs to be employed by Ph.D.-granting universities (see Chapter 10). The measures are so highly correlated as to be practically interchangeable.

Both students and faculty members within each program were given an opportunity to evaluate the scholarship and research ability of the current faculty. Though student judgments that faculty knowledge and scholarly ability are "excellent" vary somewhat with the prestige of the program's faculty, more than 80% of the students in almost all programs judged the faculty to be "excellent" or "good." Faculty members viewed the academic ability of their colleagues somewhat more critically, and in ways that are more consistent with external peer ratings. Items reflecting faculty and student ratings of the faculty's scholarship are included in the scales to represent the quality of teaching (discussed next) or the academic excellence of a program (see Chapter 4).

Table 5.1

Intercorrelations of Measures of the Quality of Programs from which Faculty Received Ph.D.'s

Source of Ph.D.		Correlations 1	2	3	Mean	S.D.
1. Average peer rating of faculty quality	C[a]	--			3.88[b]	.36
	H	--			3.83	.47
	P	--			3.42	.38
2. Percent with peer rating 3.0 or above	C	87	--		87	11
	H	95	--		86	16
	P	93	--		73	21
3. Percent with peer rating 3.5 or above	C	95	90	--	71	19
	H	97	89	--	67	22
	P	90	81	--	46	21

Note: Peer ratings used in this analysis were collected by ACE in 1969. Variables 2 and 3 can be obtained for faculty in any program from data published in Roose & Andersen, 1970.

[a] C = Chemistry (N=24), H = History (N=25), P = Psychology (N=24).

[b] 5=Distinguished, 4=Strong, 3=Good, 2=Adequate, 1=Marginal.

Quality of Teaching

The quality of teaching in an educational program is an important aspect of quality regardless of a program's purpose. Student evaluations of individual courses and instructors have become fairly well accepted at the undergraduate level. Though evaluating the teaching of doctoral students is more complex, since often the instruction is relatively unstructured, most chairmen of chemistry and psychology departments in the study reported that there were regular departmental procedures for the evaluation of courses and instructors by doctoral students (73% and 71% respectively) and also that most individual professors obtain course evaluations from their doctoral students (64% and 67% respectively replying "always" or "often"). Evaluations of instruction are not quite so common in history departments, with 57% reporting systematic procedures and 48% reporting fairly frequent use of course evaluations by individual faculty members. Nevertheless, the department chairmen's reports suggest that departments are more concerned about the quality of teaching in graduate programs than often is assumed.

One way to obtain an index of the general level of the quality of teaching in a program would be to average such student assessments of individual courses and faculty members. However, there are severe logistical limitations to this procedure, particularly if comparability across programs and disciplines is desired, because of the different procedures that are used by different universities and even by different departments within universities. Therefore, the procedure selected for this study was to ask students to make general ratings of the characteristics of their graduate faculty on a four-point scale from "excellent" to "poor." Some of these questions asked for judgments about faculty preparation for courses, helpfulness to students, excitement for new ideas, teaching methods, and overall quality of teaching. Responses to seven such items were combined to form scale scores to represent the quality of teaching experienced by advanced graduate students in each program. Details of the student scale No. 7, Quality of Teaching, can be found in Appendix F.

Table 5.2 lists most of the items in the scale and the average percent of students who rated the faculty "good" or "excellent" in programs grouped according to discipline and to peer rating of the graduate faculty. The most notable characteristic of these responses is that they do not vary very much from one grouping of programs to another, suggesting that there are some good and some not so good teachers to be found in programs at all reputational levels. Students have a high opinion of the knowledge possessed by their faculty members. They also find them reasonably excited about new ideas in the field. But only half to two-thirds of the students in most programs think that the faculty provide very useful criticism of their work, help them deal with classwork, use appropriate teaching methods, or in general are very good teachers. The scale score computed from these observations will be used to characterize a program's quality of teaching throughout the remainder of this report.

Table 5.2

Percentages of Students Rating Faculty Teaching "Excellent" or "Good"

(Averages of Program Percentages)

	Chemistry			History			Psychology		
	H	M	L[a]	H	M	L[a]	H	M	L[a]
1. Useful faculty criticism of my work (S-2-c)	65	59	66	75	66	86	69	69	55
2. Helpfulness in dealing with classwork (S-2-g)	47	69	73	61	66	88	49	59	59
3. Knowledge of the field (S-2-h)	99	93	85	98	91	96	97	94	81
4. Excitement for new ideas in the field (S-2-j)	93	71	88	85	64	71	78	68	55
5. Overall quality of teaching (S-2-k)	53	65	61	82	70	84	67	68	44
6. Appropriateness of teaching methods (e.g., seminars, lectures, tutorials, audio-visual aids etc.) (S-2-n)	56	59	55	68	59	72	58	54	47

[a] H = High peer-rated quality of the faculty (N = 6 programs in chemistry, 7 in history and psychology).
M = Medium peer-rated quality of the faculty (N = 12 programs).
L = Low peer-rated quality of the faculty (N = 6 programs in chemistry and history, 5 in psychology).

Research Productivity

The most frequently cited indicator of the research eminence of individual faculty members or departments is their publication record. Several studies have developed elaborate systems for evaluating the quality as well as the quantity of publications by indexing the quality of journals in which publications appear or by counting citations to published material (cf., Cole & Cole, 1967; Clemente, 1974; Drew, 1975; Porter & Wolfle, 1975). Such procedures are more acceptable to members of the academic community because they seem to take into account the varied quality of professional materials that may find their way into print. However, there are a number of methodological problems with such measures and, in addition, they require detailed data from or about a large number of individuals within each discipline. There is considerable evidence that self-reported counts of publications, despite their obvious potential for error, are highly related to indexes of publication quality in a number of fields (Jauch & Glueck, 1975). Therefore, we adopted faculty self-reported counts of publications and scholarly presentations as the measures of faculty productivity in this study.

Measures of the most traditional indicator of research productivity, faculty publications, were obtained by asking faculty members to record the number of journal articles and single chapters in books, scholarly book reviews, authored books, edited books or anthologies, and monographs and manuals that they had published in their entire professional career and in the last three years (1972-75). The average percentages of faculty members who reported publication of various numbers of documents, grouped by peer rating of the quality of the faculty in each program, are reported in Table 5.3. Reports of authored and edited books and monographs have been combined.

Discipline differences in publication patterns are apparent from the data in Table 5.3. More than 90% of chemistry respondents reported more than five journal publications in their careers and at least one journal article in the last three years. Many have a total of more than 50 journal publications to their credit, and 16 or more journal publications in the last three years. Psychologists are not quite so prolific, but they appear to follow the same general pattern. Historians reported publication of many more scholarly book reviews and more books during their entire careers, as well as in the last three years, than did professors in the other two fields.

The different patterns of publication by discipline probably reflect the different traditions and expectations for publication that are characteristic of these fields. Chemists almost always collaborate in their research, frequently publish results as one of several coauthors, and tend to publish several articles on different aspects of one research effort. Therefore, the average number of publications for faculty members in a chemistry department is almost certain to be higher than the average for most other disciplines.

Table 5.3

Faculty Publications and Presentations
(Average of Program Percentages)

Product	Number	Chemistry			History			Psychology		
		H	M	L[a]	H	M	L[a]	H	M	L[a]
1. Professional articles and single chapters in books, total career (F-9-a)[b]	0-5	10	4	5	34	40	52	14	14	23
	6-25	21	32	54	48	51	40	38	45	57
	26-50	19	31	30	12	5	5	32	28	16
	51+	48	33	9	4	2	1	15	12	2
2. Scholarly book reviews, total career (F-9-a)	None	55	53	70	16	18	29	43	46	65
	1-5	33	33	22	18	20	22	44	41	28
	6-25	10	5	32	37	40	29	12	10	6
	26+	1	2	1	26	21	17	0	2	0
3. One or more books or monographs, total career (F-9-a)	None	53	55	61	13	21	30	43	45	57
	1-2	28	29	23	32	37	33	32	28	31
	3+	19	16	16	54	42	36	25	27	12
4. Professional articles and single chapters in books, last three years (F-9-b)	None	3	8	10	11	16	23	5	6	12
	1-5	17	31	51	71	74	60	39	43	48
	6-15	42	42	33	15	8	13	50	44	38
	16+	36	19	5	--	--	3	6	6	1
5. Scholarly book reviews, last three years (F-9-b)	None	71	72	80	20	23	35	71	63	77
	1-5	26	25	18	48	51	50	28	35	20
	6+	2	2	1	9	5	8	--	1	1
6. One or more books or monographs, last thre years (F-9-b)	None	72	69	71	40	47	53	58	57	72
	1	18	19	15	34	36	26	21	22	16
	2+	10	11	14	25	17	20	20	20	11
7. Professional presentations in last 12 months (F-11)	None	6	11	12	8	29	18	10	19	27
	1-2	14	30	31	38	40	46	30	37	47
	3-5	32	29	42	30	21	22	36	31	18
	6+	46	27	13	18	9	8	22	12	10

[a] See footnote, Table 5.2

The pattern of collaboration, coauthorship, and emphasis on journal articles rather than books is also characteristic of psychologists, though the frequency of publication is slightly lower than among chemists. Historians, however, have a different pattern. They tend to work alone rather than in collaboration with others, and to work on one major scholarly project at a time. The goal of this project is likely to be a book, though they may publish individual chapters as journal articles while the book is in process. They publish more books but fewer articles than chemists or psychologists. Historians also publish more scholarly book reviews, perhaps because there are more books to be reviewed as well as because they carry more weight as scholarly contributions than do book reviews in the other two disciplines.

Faculty members also were asked to report the number of times in the past 12 months that they had presented some of their research results or other scholarly material as a colloquium speaker, visiting lecturer on another campus, or speaker at a professional meeting. The average program frequencies by discipline are presented as the last item in Table 5.3. Again, chemists are most prolific, but there are no great differences between the disciplines. Most departments averaged a median of 3 to 5 presentations per faculty member in the prior 12 months.

The self-reported data on faculty productivity were used to construct four measures for use in other analyses. First, the number of professional articles, single chapters in books, and scholarly book reviews were combined to form one count of journal publications that would be reasonably comparable across the three disciplines. Then, because the total number of publications in a faculty member's career is, in part, a function of the number of years in which she or he has been a professional in the field, the total number of journal publications was divided by the number of years since the person had received the Ph.D. to give a measure of the average annual rate of journal publication. These individual annual rates were then averaged within programs as a measure of the long-term productivity of the faculty.

The average number of professional articles, single chapters in books, and scholarly book reviews in the past three years among faculty members within a department was adopted as the second index of departmental faculty productivity, to indicate the faculty's current level of performance in this area.

The third area for the assessment of faculty scholarly performance, the publication of books or monographs, posed problems because of discipline differences, the relative infrequency of publishing books, and failure to find any satisfactory way to weight book and article production so that they could be combined in any defensible and acceptable form. Therefore, the percent of faculty members in a program who had published one or more books or monographs was adopted as the measure of this variable in this study. It is a measure of the extent to which a program has faculty members who have made a major contribution to their field through the publication of one or more books rather than a measure of the number of books that they have published.

The fourth index of research productivity, number of presentations in the past 12 months, is an average of faculty reports within each program.

Scholarly Activity and Recognition

It can be argued that publication rates are important, but are not sufficient to represent the research and scholarly excellence of a faculty; journal articles or books are only the tip of the iceberg of faculty research efforts and contributions to their profession. Current active involvement in research also is important, as is contact with colleagues through refereeing articles or editing journals, serving as officers in professional associations, and serving on review committees and site visit teams.

One section of the faculty questionnaire asked respondents to indicate their experience in a variety of professional areas. Responses to five of these items were combined to form Faculty Scale No. 3 on Research Activity (see Appendix F). Departments with high scores on this scale employed more faculty members who reported that they had:

-- received an award for outstanding research or scholarly writing.

-- edited a journal in their field or served as a member of a journal editorial board.

-- refereed contributed articles for a professional journal in their field.

- -- received an institutional or departmental research grant in the current year.
- -- received a nonuniversity grant or contract to support their research in the current year.

This scale is used in this research to represent the level of faculty research activity.

Other professional experiences reported by faculty members are presented in Table 5.4, together with their reports of the number of days away from campus during the past year for professional activities such as meetings, speeches, or consulting. It is important to find out about such activities when investigating individual programs, but the items did not combine well to form a scale score, and they were too numerous to use individually in most analyses in this study. Therefore, they will receive only occasional mention in the remainder of this report.

Relationships Among Measures of Faculty Performance

The interrelationships of these measures can help us answer several questions. Do faculty who perform at a high level in one area tend to perform highly in all areas? Are the peer ratings of faculty quality, discussed in the previous chapter as additional measures of faculty performance, related to the more objective measures of scholarly productivity and professional activity? Does faculty research activity complement or detract from teaching performance? The intercorrelations of eight measures of faculty performance are presented in Table 5.5, together with the means and standard deviations of the variables.

Table 5.4

Percentages of Faculty Reporting Selected Professional Activities and Recognitions

(Average Percentage Answering "Yes")

	Chemistry			History			Psychology		
	H	M	L[a]	H	M	L[a]	H	M	L[a]
1. Have you served on government or foundation review committees, site visit teams or national advisory councils in the last three years? (F-8-a)	41	30	21	46	30	14	50	39	18
2. Have you held a postdoctoral fellowship? (F-8-b)	67	68	59	70	63	41	44	32	19
3. Have you received a serious job inquiry from another employer in the last two years? (F-8-c)	54	35	37	57	44	47	62	55	53
4. Have you received an award for outstanding teaching? (F-8-d)	17	18	22	15	17	31	8	11	12
5. Have you received an award for outstanding professional practice? (F-8-f)	14	11	6	8	9	13	3	5	6
6. Have you held office or served on boards of a national professional association or organization? (F-8-g)	34	38	20	58	44	39	41	35	17
7. Have you held office or served on committees of state or regional professional organizations? (F-8-h)	25	45	48	33	42	48	25	32	36
8. Days away from campus on professional activities in past 12 months (F-10)									
0-5 days	13	18	23	27	43	31	18	27	39
6-15 days	32	44	55	45	39	50	47	46	39
16-30 days	33	22	11	16	8	12	29	20	12
31+ days	17	15	6	6	6	5	6	6	9

[a] See footnote, Table 5.2

Table 5.5

Intercorrelations of Measures of Faculty Performance

Measure		1	2	3	4	5	6	7	8	Mean	S.D.
1. Average annual number journal publications entire career	C[a]	--								3.2	1.0
	H	--								2.1	.5
	P	--								2.4	.6
2. Average number of journal publications in last 3 years	C	93	--							11.0	3.8
	H	51	--							6.9	1.5
	P	82	--							7.2	1.7
3. Percent who published a book, entire career	C	33	39	--						35	14
	H	24	55	--						75	12
	P	34	50	--						38	15
4. Percent who published a book in last 3 years	C	14	26	84	--					23	14
	H	34	47	77	--					50	15
	P	37	58	81	--					29	14
5. Average number of presentations, last 12 months	C	76	80	12	02	--				4.9	2.2
	H	75	48	12	16	--				2.5	.9
	P	11	32	67	41	--				3.1	1.2
6. Research Activity scale (F-Sc-#3)	C	63	69	54	37	55	--			2.7[b]	.6
	H	70	43	50	37	65	--			2.0	.4
	P	40	61	60	44	60	--			2.2	.6
7. Quality of Teaching scale (S-Sc-#7)	C	12	-03	05	-11	-14	11	--		2.9[c]	.2
	H	43	14	14	00	39	15	--		3.1	.2
	P	28	27	58	23	79	59	--		2.9	.2
8. Peer ratings of faculty quality (F-25-a)	C	85	90	34	19	64	73	09	--	2.9[d]	1.0
	H	55	50	52	37	56	78	00	--	2.8	1.1
	P	33	47	57	40	45	86	52	--	2.9	1.0

[a] C = Chemistry (N = 24 programs
H = History (N = 25 programs)
P = Psychology (N = 24 programs)

[b] Average number of "yes" responses to five items

[c] 4 = Excellent, 3 = Good, 2 = Fair

[d] 5 = Distinguished, 4 = Strong, 3 = Good

The two measures of the production of articles reported in Table 5.5 suggest a continuity of level of activity; faculty members who have produced a large number of articles throughout their careers also tend to have produced relatively large numbers of articles in the last three years. A similar conclusion applies to the publication of books. However, the smaller correlations between the average annual number of articles produced by the faculty and the percentage of faculty members who produced books suggest that these two types of publication activities are relatively independent.

As expected, the number of presentations in the past 12 months were more closely aligned with the production of articles than with the production of books. The research activity scale correlates relatively highly with all of the productivity measures, as do peer ratings of faculty quality. The quality of teaching scale, however, apparently measures something quite different, for the correlations with almost all of the other performance measures in chemistry and history and some of the publications measures in psychology are very low. These results strongly suggest the relative independence of faculty teaching excellence as perceived by students and the self-reported research involvement of faculty members.

When interpreting these results, it is important to recall two things: correlations can be misleading, and one of the goals of this project was to find ways to evaluate individual programs. To see how these points bear on the faculty results, consider the relationship between the average annual production of journal articles and the peer ratings of faculty quality in history, as shown in Figure 5.1. The figure plots peer ratings of history faculty horizontally and average annual publications vertically, with individual programs represented by randomly assigned letters. Lines have been drawn to indicate the mean of each variable. Perfect agreement between the characteristics would be represented by a diagonal line from the lower left to upper right corners. Although the correlation in Figure 5.1 is fairly high (.55), the locations of Departments J, C, and K provide a good illustration of the way in which correlations can be misleading for individual program review. The faculty of Department J, the most productive of all, has one of the lowest ratings, and the faculty of Department C, which has a rating just below that of Department K, averaged nearly twice as many articles per year as K.

Figure 5.2 shows the relationship between peer ratings and the average number of articles produced in the last three years in psychology. The faculty of Department H, near the bottom of the peer ratings, is about as productive as that of Department M, the second most-highly-rated department. The faculty of Department I was more than twice as productive as Department K's, yet it was rated slightly lower.

Recently it has been suggested that the rate of faculty publication in key journals might be used as an objective measure of departmental performance in the sciences, since it has been shown to correlate highly with the ACE ratings of quality (Drew & Karpf, 1975). The correlations in Table 5.5 suggest that self-reported counts of publications in chemistry might do as well, and they would be much

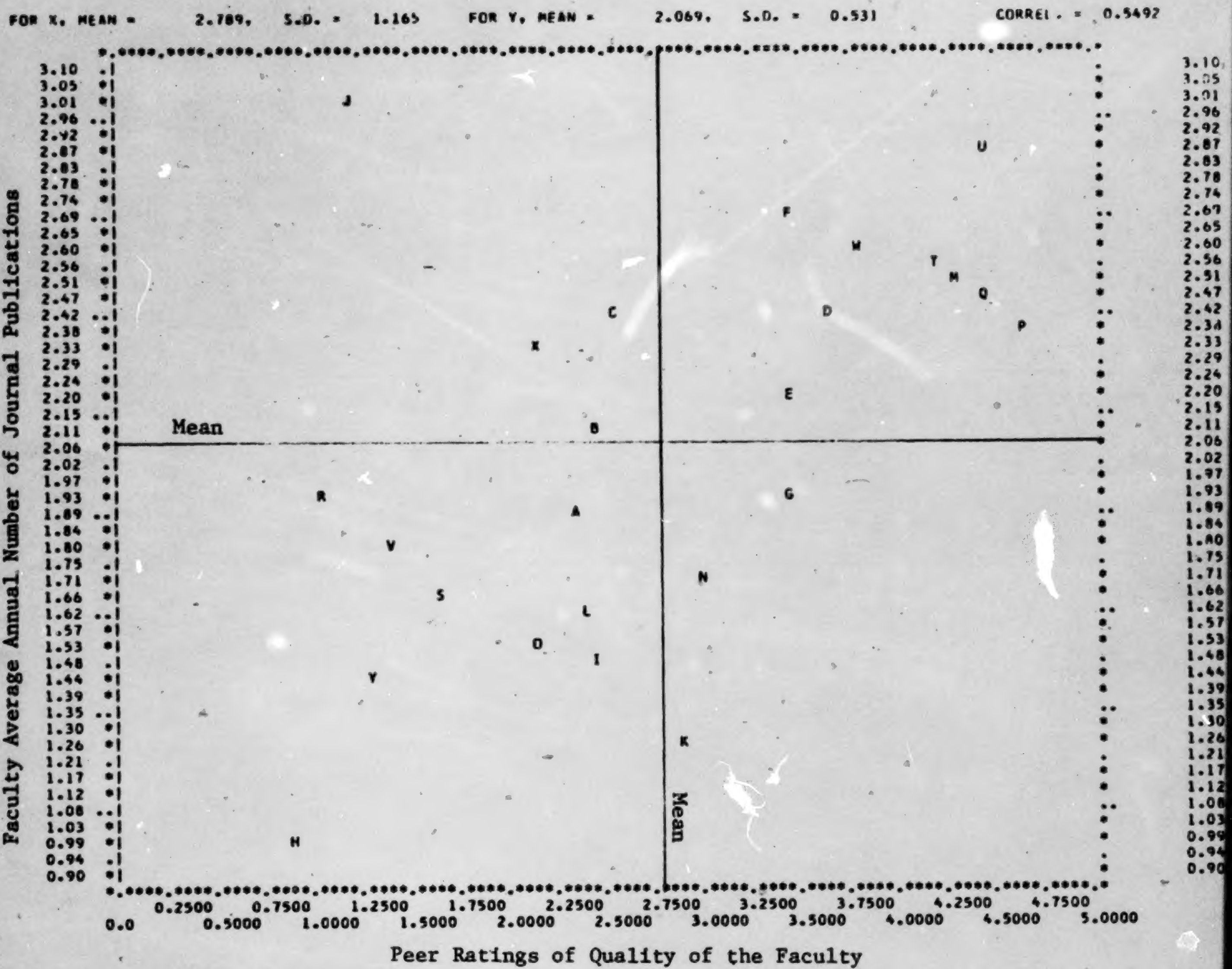


Figure 5.1. Scatterplot of Peer Ratings of Faculty Quality and Faculty Average Annual Journal Publications in History

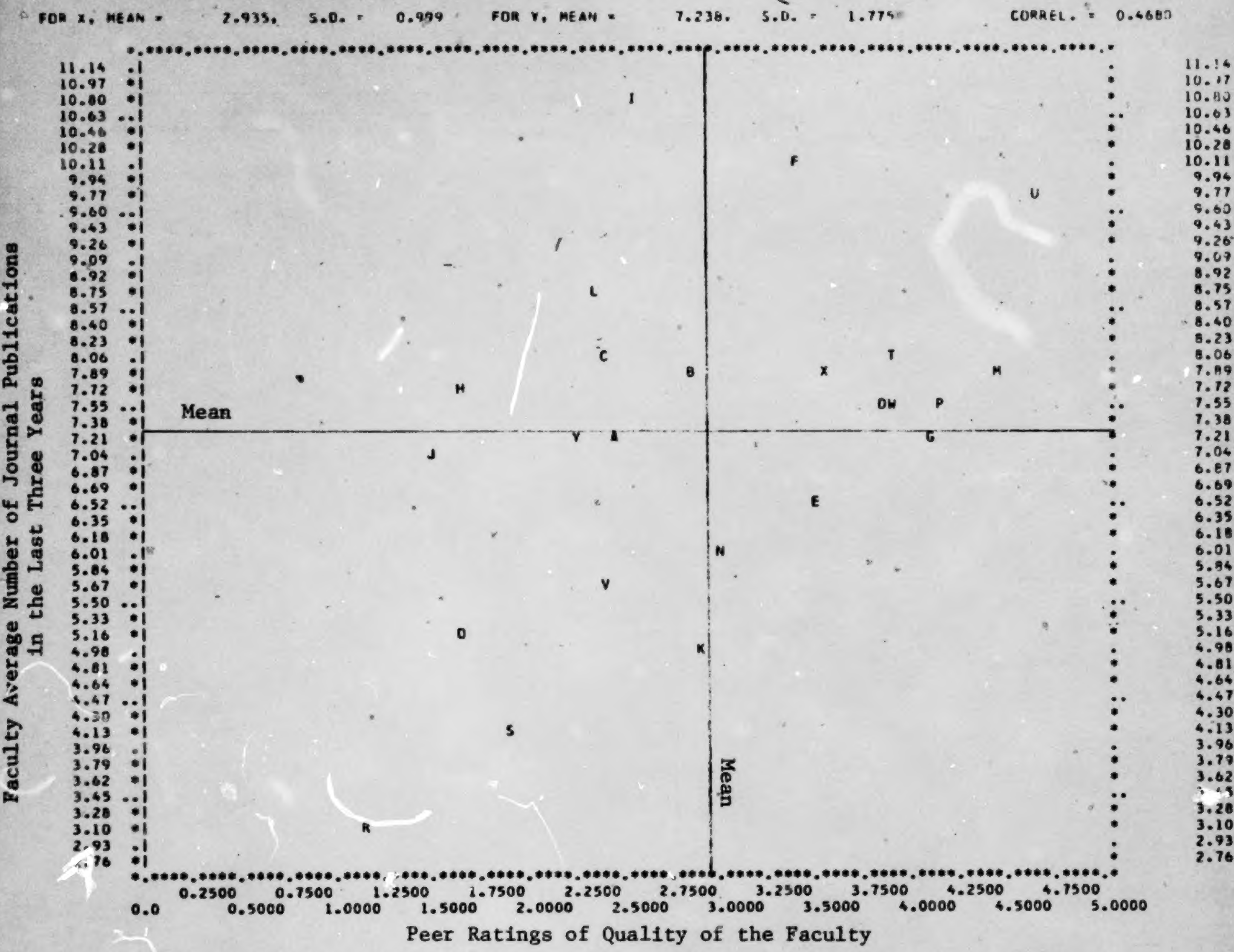


Figure 5.2. Scatterplot of Peer Ratings of Faculty Quality and Journal Publications in the Last Three Years in Psychology

easier to collect. The very high relationship is found only in chemistry, however, suggesting that publication counts (whether self-reported or counted from bibliographies or journal lists) probably are much less useful as single indicators of quality in fields outside the hard sciences. In fact, the major message of the intercorrelations between these eight measures of faculty performance is that each one of them contributes some unique view of a department's character and quality. No one measure is sufficient to assess the quality of faculty performance or of the overall program quality.

Correlates of Faculty Performance

The measures described in the previous section are concerned with three major aspects of faculty performance: the quality of their work as teachers, their current involvement with research-type activities (such as editing professional journals, reviewing papers, and obtaining research grants), and their contribution to new knowledge in their fields through publications. In this section we will look at one measure of faculty performance in each of these areas in relation to other departmental descriptors, in order to identify the kinds of programs that are associated most closely with different patterns of faculty behavior. The variables selected for closer investigation are the student scale on the quality of teaching, the faculty scale on research activity, and the average number of journal publications in the last three years by a department's faculty members. The last indicator was selected from among the several productivity measures in Table 5.5 because it seemed to represent most accurately the current status of a program with respect to faculty scholarly contributions to each discipline.

Table 5.6 presents the correlations of these three measures of faculty performance with a variety of other departmental descriptors. These data indicate that:

-- student ratings of the quality of teaching in all three disciplines are strongly related only to student ratings of the learning environment (8) and personal satisfaction with the education they are receiving (9), and to some extent with faculty research involvement in psychology.

-- only in chemistry are the number of publications and the amount of research activity both highly related to the research emphasis of the program (1), resources (3), travel away from campus (5), and outside research grants (7).

-- but in all three disciplines there is a strong relationship between the size of the program (2) and the number of recent faculty journal publications (despite the fact that the publication index has been adjusted for the number of faculty members in the department).

-- the research activity scale correlates more highly with a number of other research-related program descriptors than does the publication measure in all three disciplines, suggesting that this may be a better single indicator of the research performance of a department's faculty.

-- programs with faculty members who are actively involved in

Table 5.6

Correlations of Three Measures of Faculty Performance with Other Departmental Descriptors

	Quality of teaching scale			Avg. number journal pubns. last 3 yrs.			Research Activity Scale		
Program Characteristics	C	H	P*	C	H	P	C	H	P
1. Program emphasis on research (F-2-m)	13	-02	61	84	21	28	67	76	67
2. Size: FTE doctoral students (DP-5)	22	01	29	77	48	61	73	61	51
3. Faculty-rated adequacy of physical and financial resources (F-2-x)	34	00	60	56	09	30	75	66	71
4. Faculty-rated scholarly excellence of program (F-Sc-#1)	24	13	72	68	27	43	61	62	69
5. Faculty days away from campus (F-10)	-16	20	29	71	31	11	58	40	16
6. Experience: years since receiving doctorate (F-14)	17	-22	25	19	03	-04	33	14	51
7. Percent of faculty with outside research grant (F-8-1)	04	27	46	67	31	37	83	51	87
8. Student-rated environment for learning (S-Sc-#1)	52	63	58	-16	-25	15	02	-49	01
9. Student satisfaction with program to meet their needs (S-Sc-#3)	68	89	77	27	16	27	30	34	56
10. Alumni: extremely good preparation for scholarly research (A-4-a)	13	25	-19	60	46	24	51	60	43
11. Percent of alumni currently engaged in research or research and teaching (A-18-)	-07	04	02	22	06	49	-25	67	52

*See footnote, Table 5.5

research and publication produce alumni who say that the program prepared them "extremely well" for careers in scholarly research (10) and these alumni tend to take jobs involving research (11). (The negative correlation between faculty research activity and percent of alumni in research positions in chemistry probably reflects the high percent of chemists who report an applied or practitioner major job activity in industry.)

The correlations between faculty age or experience (years since receiving the doctorate, #6 in Table 5.6) and measures of faculty performance suggest a relationship of any consequence only in the research activity of chemists and psychologists. More experienced faculty members were not viewed by their students as better teachers, but experience perhaps gives them more visibility and more opportunity for research activity.

The table of background characteristics of faculty respondents in Appendix E gives the average hours per week reported by faculty members in each discipline spent in professional activities such as teaching, advising students, research and scholarly writing, and program administration. As expected, hours spent in teaching are negatively related to research productivity and activity, and hours spent in research and writing usually demonstrate the opposite relationship to these variables. However, there are many mixed relationships between faculty reports of the ways in which they spend their time and other measures of program characteristics, suggesting that time estimates are not very valid indicators of program activity.

A persistent question in higher education, at the graduate as well as the undergraduate level, is the relationship between the research effort of faculty members and their skill as teachers (cf., Fulton & Trow, 1974). Must graduate programs emphasize faculty research and publication in order to provide good learning experiences and good teaching for the young scholars who enroll in the programs? Table 5.7 reports the relationship of a program's faculty research activity score and the average number of journal articles published in the last three years with a variety of program indicators related to the learning environment and good teaching. Though some of the correlations have been reported in earlier tables, it seems useful to bring them together in this way to examine the question of research vs. teaching.

Before investigating these relationships, perhaps it would be useful to point out the difference between a program's emphasis on preparing students for positions as college teachers, as discussed in Chapter 3, and the performance of faculty members as teachers and as advisers to students. The attention given by a program to the training of researchers, teachers, or practitioners is not necessarily related to the performance of the faculty members in that program as teachers or as researchers. However, the weight given to the performance measures might vary depending upon a program's purposes.

Of the variables related to good teaching that are listed in Table 5.7, only alumni reports of their dissertation experiences (6)

Table 5.7

Correlations of Faculty Research Activity and Publications with Eight Variables Related to Good Teaching

Teaching Measures	Research Activity			Journal Publications		
	C	H	P[a]	C	H	P
1. Student-rated quality of teaching (S-Sc-#7)	11	15	59	-03	14	27
2. Student-rated environment for learning (S-Sc-#1)	02	-49	01	-16	-25	15
3. Student-rated faculty concern for students (S-Sc-#4)	-11	-24	12	-13	-21	-14
4. Student assistantship experience (S-Sc-#8)	34	-13	66	43	-32	25
5. Students: learned a great deal in department (S-1-o)	18	42	07	-04	19	11
6. Alumni dissertation experiences (A-Sc-#1)	41	48	54	41	28	29
7. Faculty-rated humaneness of environment (F-1-m)	32	-10	16	12	-15	25
8. Faculty-rated quality of faculty/student relations (F-2-d)	33	-19	03	13	-11	25

[a] See footnote, Table 5.5

are consistently positively related to the research activity and publication rate of a program's faculty. Satisfaction with student assistantship experiences (4) are positively related to faculty research efforts in chemistry and psychology, no doubt reflecting the large number of research assistantships in both of these fields. As noted earlier, there appears to be some positive relationship between teaching quality and research activity in departments of psychology. But, in general, the pattern is one of a low or negligible relationship between the two variables. Teaching and research appear to be relatively independent dimensions, suggesting that departments could be excellent in one area and poor in the other, poor in both, or, as would be the ideal, excellent in both areas. Given the limitations of finances, it may be easier for faculty members who are good researchers to substantially improve their teaching than for those who are good teachers to substantially increase their research productivity. In any event, research and teaching are relatively independent dimensions for assessment when investigating program quality.

Summary and Implications

The quality of a doctoral program's faculty probably is the single most important characteristic associated with the assessment of program quality, as reflected in the widespread use of peer ratings of the quality of a program's faculty as the index of program quality. On closer investigation, however, we find that there are several different aspects of faculty training and performance that contribute to a total picture of the quality of the faculty in any particular program, and that these characteristics are not well represented by any single measure. Some of the major findings are that:

-- assessments of the quality of teaching are most closely related to measures of the learning environment, discussed in some detail in Chapter 8, and are relatively independent of the research activity or publication productivity of the faculty.

-- research productivity, as measured by the publication of journal articles, book reviews, and books or by the presentation of research results at scholarly gatherings, varies by discipline and can be measured in a number of different ways with somewhat different implications for program assessment.

-- the research activity scale, reflecting faculty involvement with professional publications and financial support for their research, relates more consistently with other research variables across all three disciplines than does any one of the publications measures, and may be a better single indicator of faculty research performance.

-- faculty background characteristics such as highest degree, tenure, and years of experience do not demonstrate differences between programs that are usefully related to measures of program quality. The degree origin of faculty members, measured by peer ratings of the programs from which they received their highest degrees, is somewhat related to other measures of program quality, but serves mainly to document the fact that a very large proportion of the faculty members who teach doctoral students in every program in the study earned their highest degrees from a high prestige program.

Three measures of faculty performance, in addition to peer ratings of faculty quality, were selected for particular attention in this chapter. They were student-rated quality of teaching as a measure of this important part of every faculty member's professional responsibility; mean number of journal articles and book reviews published in the last three years to represent a department's current research productivity and scholarly contribution; and research activity as reflected in a set of items concerned with journal editing, article refereeing, and university or external financial support for research. Other items, such as professional recognition through honors, awards, or offices in professional associations, could be added to the list. However, these three seem to capture the major elements of faculty performance reasonably well, and each adds something unique to the understanding of departmental excellence in this area.

Chapter 6

STUDENT ABILITIES AND ACHIEVEMENT

The ability and commitment of the students who are attracted to graduate programs and who stay to complete degrees also are important elements in a program's achievement of educational excellence. Ideally, there would be comprehensive information about the academic ability of the students entering each of the departments in the study. However, this information was much more difficult to obtain than we had expected. Fewer than half of the departments could report average Graduate Record Examinations test scores for their most recent entering students, and almost all of the average scores that were reported were in a narrow range between 600 and 700. Also, some of the averages were based on test scores of only a small percentage of the students who started a program in any given year. Therefore, department-reported GRE scores were not considered sufficiently available or reliable to include in our data analyses. We did not ask student questionnaire respondents to report their own test scores because they were advanced graduate students and an average of four or five years since taking the test seemed too long for reliable recall.

In an effort to find some other standard measure of student academic ability at entrance, we examined the average GRE scores that had been sent to each department in the last year. (Scores are sent to departments at the request of the test-takers;

summaries of test scores sent to each department were available from the GRE program.) The average of scores sent to a department on the advanced test in each field was plotted against peer ratings of the quality of the doctoral faculty in the same department. The plots indicated a very high level of correspondence between the two variables in all three fields. This close relationship between average test scores and program quality ratings was found even though the average score ranges were quite narrow--626 to 747 on the advanced test in chemistry, 505 to 590 on the history test, and 530 to 591 on the psychology test. Other research has demonstrated that students apply to graduate schools where they think they have a reasonable chance of being admitted. These results suggest that high prestige programs attract students with higher test scores, in addition to probably admitting students with higher levels of tested prior knowledge in the field. However, because there was no way to know which of these students had been admitted or which ones enrolled in a given program, the test score averages were not used in other data analyses.

There were, however, several variables in our surveys which bore on students' academic capacity. These included: (1) the average undergraduate grades of students in each department; (2) faculty ratings of the scholarship of students; (3) faculty ratings of students' effort; (4) faculty ratings of students' scholarly commitment; (5) an average Student Commitment and Motivation Scale score based on faculty perceptions; (6) an average

Student Communication Scale score based on faculty perceptions; and (7) the percentage of students in each department who planned careers in research or college teaching. Means, standard deviations, and intercorrelations of these items are presented in Table 6.1.

Average undergraduate grades obviously have a number of limitations as measures of the academic qualifications of students. Any particular student's undergraduate grades may be affected by the difficulty of the courses taken and the overall standards or the grading practices of college attended; an average of these grade-point averages may not accurately reflect the students' relative undergraduate achievement. In addition, these advanced doctoral students reported uniformly high undergraduate grade averages (see discipline means for item #1 in Table 6.1). Therefore, though they correlate highly with faculty perceptions of the academic ability of their students, the range of grades is now severely restricted, at least when compared with all students who receive baccalaureate degrees.

Faculty ratings of students' scholarly commitment, motivation, and communication skills appeared to offer more promise. The items that formed the basis of these scales were adapted from an earlier study of faculty ratings of outstandingly good and poor graduate students on a set of "critical incidents" of academic behavior (Reilly, 1974). In that study, the items were tested in a number of diverse departments, and the results were refined by factor analysis techniques. The items and scales which survived our own statistical analyses were as follows:

Table 6.1

Correlations Among Measures of Student Quality

		Correlations							
		1	2	3	4	5	6	Mean	S.D.
1. Undergraduate GPA (S-15-a)	C[a]	-						3.30[b]	.15
	H	-						3.30	.17
	P	-						3.47	.08
2. Faculty ratings of scholarship ability of students (F-2-r)	C	68	-					2.52[c]	.51
	H	69	-					2.74	.27
	P	44	-					2.93	.39
3. Faculty agreement that students work hard (F-3-a)	C	72	74	-				2.86[c]	.38
	H	57	82	-				3.25	.30
	P	37	79	-				3.26	.30
4. Faculty agreement that students are committed to pursuit of scholarship (F-3-k)	C	62	86	78	-			2.29[c]	.33
	H	67	80	87	-			2.74	.35
	P	48	87	79	-			2.60	.38
5. Faculty-rated student commitment/motivation (F-Sc #4)	C	54	84	79	91	-		2.67[d]	.30
	H	59	85	83	93	-		2.81	.20
	P	38	87	87	92	-		2.85	.23
6. Faculty-rated student communications skills (F-Sc #5)	C	58	81	74	91	91	-	2.29[d]	.29
	H	57	77	66	88	91	-	2.60	.18
	P	42	78	69	87	87	-	2.64	.20
7. Percent of students with career goals in research or college teaching (S-18)	C	-02	-13	-26	-16	-35	-11	65	.14
	H	11	08	27	00	-01	-16	84	.09
	P	33	16	49	26	38	44	58	.13

[a] C = Chemistry (N=24 programs)
H = History (N=25 programs)
P = Psychology (N=24 programs)

[b] 4 = A, 3 = B, 2 = C

[c] 4 = Excellent or agree strongly
3 = Good or agree with reservations
2 = Fair or disagree with reservations

[d] 3 = high level in 50-75% of students
2 = high level in 25-50% of students

Student Commitment and Motivation. In departments which stand high on this scale, faculty said that students . . .

Do a good deal of unassigned reading.

Handle assignments with care.

Are not easily distracted from their studies.

Show enthusiasm for their field in discussions.

Work on projects to completion despite setbacks.

Are not dependent on faculty for direction.

Rarely fail to complete major assignments on time.

Student Communication Skills. In departments which score high on this scale, faculty said that students . . .

Have thought-provoking classroom comments.

Show imagination in presenting dull topics.

Offer well-founded criticisms of others' work.

Do not present their ideas in a poorly organized way.

Table 6.1 indicates that the scales are highly correlated with one another, suggesting that faculty members do not make distinctions between these two student dimensions, or at least not when characterizing the department's collection of students rather than judging individual students.

Scholarly career goals of students do not appear to be highly related to their undergraduate grades or to faculty judgments about their performance as students. Career goals are discussed at greater length in a later section of this chapter.

Correlates of Student Quality

It should come as no surprise that students with good grades and high ratings from their faculty tended to be enrolled in large programs that were also prestigious, research-oriented, affluent, and well-equipped. To illustrate these findings, some selected correlates of undergraduate grades and the Student Commitment/Motivation Scale are shown in Table 6.2. Based on these correlations and others that are not included in the table, it is apparent that students with higher than average undergraduate grades tended to be found more often in programs which pay the faculty well; where the average amount of outside research funds are high; where the faculty come from prestigious programs; where the emphasis is on preparing researchers, not teachers or practitioners; and where the students, faculty, and program are oriented toward scholarship. Similarly, professors tend to rate students high in commitment and motivation where the resources are considered good; where students are hard workers and competitors; where the faculty spend relatively little time in teaching; where faculty produce many articles and presentations; where faculty feel that the program is excellent and one which is compatible with their interests; where the procedures for evaluating students are good; where faculty are active in research; and where high ratings of the quality of the faculty are received from peers.

These correlations are consistent with the common observation that the most able students tend to congregate in the "best" programs. Here,

Table 6.2

Correlations Between Student "Quality" and Selected Program Characteristics

	Chemistry	History	Psychology
Correlations of Average Student Undergraduate Grades with:			
Number of doctoral degrees awarded annually	69	48	45
Percentage of faculty from highly rated departments	47	59	40
Students' perception of emphasis on preparing researchers	53	63	64
Students' perception of emphasis on preparing teachers	-54	-72	03
Students' perception of emphasis on preparing practitioners	-24	-65	-48
Students' ratings of scholarly excellence of program	64	42	56
Correlations of Average Student Commitment/Motivation Scale Score with:			
Faculty ratings of adequacy of resources	71	44	68
Faculty view that students have strong sense of competition	81	32	82
Faculty self-ratings of program scholarly excellence	86	85	93
Faculty research activity scale	54	35	62
Peer ratings of quality of faculty	59	56	66

as in many other areas in this study, it appears that the affluent and prestigious programs are most favored. They attract the most able students, who in turn have access to the best equipment and the most highly regarded faculty, and who also have the first chance for positions in prestigious colleges and research agencies.

Other Student-Related Indicators of Program Quality

Several other measures of the characteristics and progress of students might be considered when assessing program quality, in addition to those presented in the previous sections. Probably the most obvious are assessments of knowledge or skill at the end of the course of study, perhaps represented by performance on qualifying examinations or dissertations. However, though both of these means of assessment are used by most doctoral programs, there is no easy way to compare the judgments made about students in one program with those made about students in another program. Therefore, performance on qualifying exams and dissertations were not included as variables in this study. They might, however, be useful foci for further research on the cooperative development of performance criteria. In particular, the panel of graduate deans encouraged the use of external judges to evaluate the excellence or uniqueness of dissertations that had been submitted by students in various programs in recent years.

The possibility of developing a standard criterion, such as a test of knowledge in a particular discipline, was suggested to the panel of graduate deans that was described in Chapter 1.

However, this suggestion was not endorsed by them, perhaps because they foresaw the many problems that would be encountered in trying to get agreement about the contents of such a test at the doctorate level in almost any field. The deans did, however, give moderate endorsement to alumni evaluations of their gains in knowledge and skill as a result of attending a particular program. Therefore, the alumni questionnaire contained several items which asked recent alumni to evaluate various graduate school experiences in relation to their present careers. These responses are discussed in Chapter 10 and reported in Table 10.6.

In addition to measures of student academic ability and performance, the quality of a doctoral program might be considered to be reflected in its ability to attract large numbers of able applicants (admissions selectivity), its record of dropouts or percentage of entering students who complete the doctorate (holding power), or the length of time taken by students to complete their degrees (efficiency of degree production). Items were included in the Departmental Profile to estimate the status of a program in each of these areas.

A program's admissions selectivity was assessed by comparing the number of new doctoral students enrolled in a recent year with the number who were offered admission, and the number who applied for admission, in the same year. In chemistry and history, the ratio of admitted to applied students ranged from about 20% to nearly 100%, with the median program admitting about 55% of those who applied. The median yield of these two fields, or ratio of enrolled to admitted students, was about 42%. The percentage of applicants who were admitted was much lower in psychology, ranging from 03% to 22%, with a median of 08%; the median yield was slightly higher than in the other fields, or about 65%.

The percentage of applicants who were admitted was used as a selectivity index in some of the analyses reported in other chapters of this report, but it did not prove to be very highly related to any of the other measures. Some of the inadequacy of this measure undoubtedly is due to different record keeping and admissions procedures on the various campuses, resulting in data that may not always be comparable; in addition, there would appear to be a number of factors other than quality that affect the number of applications received by a given department--for example, geographic location. Therefore, though admissions selectivity seems at first glance to be a potential indicator of program quality, further investigation reveals that there are both procedural and conceptual weaknesses that restrict its usefulness.

Concerning a program's holding power, department chairmen were asked to estimate the percentage of entering doctoral students who eventually complete the degree in their departments. Their estimates ranged from 25 or 30% to 90 or 95%; the average completion rate was reported to be about 70 to 80% in chemistry and psychology and 60 to 65% in history. The data do not provide an explanation for the discipline differences, except perhaps one suggested by the relationship between rate of completion and percentage of students with some form of financial assistance. All programs in chemistry and psychology reported some form of financial assistance to more than half of their doctoral students; the median department in both fields provided assistance to more than 90% of its students. In contrast, history departments reported a median of 56% of the doctoral students with financial assistance. A larger proportion of students without financial assistance may account in part for the lower rate of degree completion in history.

On the assumption that the completion rate estimates were reasonably good "educated guesses", even if not always based on hard data, we investigated the relationship between the holding power of departments and a few other measures of their scholarly excellence and learning environment. In history and psychology, there were low negative correlations between the estimated rate of degree completion and peer ratings of the quality of the graduate faculty (-.19 and -.31); a low positive relationship (.41) between these characteristics was found among chemistry programs. In history and psychology, rate of degree completion appears to be positively influenced by environmental factors such as faculty concern for students and a humane atmosphere in the department (correlations on the order of .25 to .30); this relationship was zero or negative in chemistry. These results must be interpreted with caution, however, because of the uncertain quality of the degree completion estimates.

The efficiency of degree production within a department, or the length of time taken by most students to complete the degree, is known to vary considerably from field to field and to be affected by factors such as financial assistance and laboratory vs. library or clinical research. Eighteen to 20 departments in each field indicated the average number of years required by their students to complete doctoral degrees in recent years, by area of specialization. Almost all of the chemistry and psychology departments reported 4 to 5 years, usually with an additional year or two required by students in clinical psychology. History departments were more variable; about half of them reported 4 to 6 years for all of their students, while the other half reported as much as 8 or 9 years for students in some areas of specialization. The similarity of responses across programs in a given discipline suggests that a simple and direct measure of this program characteristic is not very useful for comparison across programs. There is no doubt, however, that it is an area of interest when evaluating a particular program, or in research that plans to consider several program characteristics simultaneously.

Student Employment Goals

Other indicators endorsed by the panel of graduate deans in the area of student achievements, knowledge, and skill included measures such as percentage of recent graduates who obtained employment directly related to their field of specialization, percentage of recent graduates offered postdoctoral fellowships, and percentage of graduates employed by doctorate-awarding universities. Questions along these lines were included in the alumni questionnaire and are reported in Chapter 10, Table 10.2.

A related question, of course, is the career goals of doctoral students who expect to receive their degrees within a year or two. Table 6.3 shows student reports of the kinds of positions they hoped to hold on completion of graduate school, with programs grouped according to high, medium, or low peer rating of the quality of the graduate faculty within each discipline. The most striking observation from the table is the disciplinary differences in career direction. A majority of the chemists hoped to obtain postdoctoral fellowships or nonacademic research positions; historians aimed almost exclusively toward college teaching or university research and teaching; and a majority of the psychologists hoped to find positions in universities or in clinical practice. There were almost no differences in the career goals reported by students at programs with differing reputational ratings, except that generally smaller percentages of students at the lowest-rated programs aspired to positions in research and teaching at a university.

When we compare these career goals with alumni reports of their first positions after the degree, or with the alumni's current positions (see Table 10.2 as well as Table 6.3), we see that postdoctoral fellowships were preferred by about one-third of the chemistry students and accounted for about half of the first

Table 6.3

Student Employment Goals Upon Completing the Doctorate

(averages of program percentages)

	Chemistry			History			Psychology		
	H	M	L[1]	H	M	L[1]	H	M	L[1]
1. Postdoctoral fellowship	35	22	30	3	2	3	12	8	8
2. Pre-college teaching or administration	0	0	0	*	1	0	*	0	0
3. Teaching in junior college	*	2	1	2	3	6	*	*	0
4. Teaching in a four-year college or university	11	18	14	41	45	52	9	10	10
5. University research and teaching	16	17	13	46	39	25	49	40	29
6. College or university administration	1	0	0	1	1	3	*	*	0
7. Research in industry or nonprofit organization	32	34	39	1	1	2	6	10	5
8. Self-employed professional practice	*	*	1	0	0	1	1	3	7
9. Professional practice with a clinic, hospital, or agency	1	3	3	*	*	0	15	21	36
10. Executive position (administrator, curator, etc.) in government or other nonacademic organization	1	1	0	1	2	4	2	2	5
11. Other	3	2	1	4	4	2	4	4	1

[1] See footnote, Table 5.2

*Less than 1%.

employment of graduates three to five years earlier from the same programs. Preference for research in industry or with a nonprofit organization appears to be realistic, since about 20% of the chemistry graduates were employed in these kinds of jobs initially and more than 40% are currently in these kinds of positions. Only an average of about 15% of the chemistry Ph.D. students aspired to employment in a Ph.D. university, but even this level is probably higher than warranted by opportunity, based on the employment profile of alumni.

Very few students in history and psychology expected to go into postdoctoral fellowships, but about 2 out of 5 from each program hoped for jobs at Ph.D. universities. This goal is related to reputational level of the program--almost half of the students at top prestige programs, compared to about a quarter of the students at low rated programs--but, even so, the levels appear to be unrealistic in relation to the first jobs or current jobs of recent graduates from the same programs. Many historians, particularly from programs that do not enjoy top prestige, hoped to teach at a four-year college or a non-Ph.D. university. Almost half of the programs' earlier graduates are currently working in these settings. Very few of the doctoral candidates in these three disciplines were aiming toward community college teaching, and very few of the graduates were employed in this setting.

Summary

This chapter has reported or commented upon a number of indicators that have been suggested to represent the academic preparation of students who attend particular graduate departments, their performance as students in the department, and the level of their knowledge and skill when they complete the program. Unfortunately, most of the measures proved to be not very useful largely because departmental records were inadequate to provide reliable information across programs (for instance, the average GRE scores of entering students). Graduate school grades, the most obvious indicator of student academic performance, is equally obviously not appropriate for cross-program comparisons. (In fact, the graduate school grades reported by these advanced doctoral students were uniformly high and with very little variation--almost all of them 3.5 or above. Therefore, they would not be expected to show very systematic relationships even with closely related measures of academic accomplishment.)

Among the measures attempted in this research, the most useful indicator of student academic ability at entrance appeared to be self-reported undergraduate grades. Faculty ratings of student intellectual commitment and motivation appears to have some promise as a measure of academic performance among enrolled students. Of the measures attempted here, alumni reports of their employment settings and professional involvements probably represent the best indicators of program outcomes. None of these is as satisfactory as one would wish, however. In particular, more careful thought and research are needed to identify and develop better indicators of the impact of graduate programs on the intellectual and professional development of their students.

Chapter 7

QUALITY OF RESOURCES

Few would argue with the assertion that adequate facilities and resources are necessary to conduct first-rate activities of just about any kind. However in graduate programs the need for adequate facilities may be even more important than it is in other areas. It is difficult to conceive of historians furthering scholarship without an adequate library at their disposal, or chemists to carry out quality research without well-equipped laboratories. Yet, it is quite clear that the nature and quality of the physical facilities and other resources do vary considerably across graduate programs and departments. Where such resources are superior, they obviously make the advancement of knowledge more likely to occur, but they by no means assure it; where such resources are found wanting, genuine contributions to new knowledge are possible, but far less likely and certainly not very easy.

In this chapter we shall discuss faculty and graduate student ratings of the facilities and resources available to their department, what kinds of departments are reasonably well off in this regard and what kinds less so, to what extent quality of resources appears to be related to the instructional concerns of graduate departments as well as to their research concerns, and finally, to what extent judgments about the quality of resources can be inferred on the basis of other descriptive information about graduate programs.

7.2

Student and Faculty Ratings of Resources

Both students and faculty members were asked to rate several types of facilities and resources. They were asked to rate the library holdings, laboratory facilities, and computer facilities available to them. In addition, students were asked to rate the quality of their classrooms and other instructional space, and faculty members were asked to appraise the overall adequacy of the physical and financial resources.

From the correlations reported in Table 7.1, we can see that, in general, both student and faculty ratings of one specific type of resource tend to be higher at places where there is also greater satisfaction with other specific types of resources. For example, in the fields of history and psychology the departments which receive higher ratings for the adequacy of the library holdings also tend to be departments where there is greater satisfaction with the laboratory facilities, the computer facilities, and the overall physical and financial resources. In chemistry departments, however, this congruence is less pronounced. Chemistry students' ratings of specific resources are interrelated, but the ratings made by the faculty in chemistry are less global. Chemists' ratings of their library holdings are unrelated to their ratings of their laboratory facilities ($r = .02$), computer facilities ($r = .09$) or overall physical and financial resources ($r = -.11$). In fact, among chemists, ratings of the overall physical and financial resources are meaningfully related only to their ratings of the laboratory facilities (.73). We might go so far as to say that faculty members' satisfactions with

Table 7.1

Intercorrelations Among Student and Faculty Ratings of Different Facilities and Resources

		1	2	3	4	5	6	7	Mean[b]	S.D.
Faculty ratings of:										
1. Library holdings (F-2-h)	C[a]	-							3.37	.40
	H	-							2.88	.46
	P	-							2.86	.51
2. Laboratory facilities (F-2-i)	C	02	-						3.08	.49
	H	77	-						2.75	.39
	P	48	-						2.82	.47
3. Computer facilities (F-2-j)	C	09	53	-					3.48	.35
	H	77	78	-					3.21	.42
	P	24	56	-					3.35	.33
4. Overall physical and financial resources (F-2-l)	C	-11	73	14	-				2.66	.48
	H	75	76	67	-				2.40	.42
	P	37	71	30	-				2.68	.45
Student ratings of:										
5. Library holdings (S-3-a)	C	79	-07	05	-12	-			3.16	.43
	H	89	54	64	70	-			3.07	.50
	P	81	50	25	29	-			2.72	.55
6. Laboratory facilities (S-3-b)	C	14	78	27	51	25	-		3.07	.43
	H	42	54	39	60	36	-		2.57	.89
	P	45	81	44	70	58	-		2.81	.57
7. Computer facilities (S-3-c)	C	36	46	67	31	42	39	-	3.32	.35
	H	36	52	57	42	22	61	-	3.22	.42
	P	13	42	73	36	16	48	-	3.36	.32
8. Classrooms and other instructional space (S-3-d)	C	07	64	31	25	12	71	30	2.87	.42
	H	44	75	50	61	34	56	44	2.82	.43
	P	14	69	33	72	13	77	45	2.93	.42

Note: Underlined correlations are indices of agreement between student and faculty satisfactions with same facilities or resources.

[a] C = Chemistry, H = History, P = Psychology

[b] 4 = Excellent, 3 = Good, 2 = Fair, 1 = Poor

facilities in history and psychology depend on the adequacy of resources of different kinds, but in chemistry the overall satisfaction is "determined" largely by the quality of laboratory facilities.

It is also worth noting that there is considerable agreement between the ratings of students and faculty. The correlations between the ratings of these two groups--the underscored figures in table entries 5, 6, and 7--are uniformly high.

What kinds of departments tend to have better facilities, at least as rated by the faculty? Or, stated another way, what kinds of departmental characteristics tend to be associated with faculty members' ratings of the departments' physical and financial resources? Data pertinent to this question are presented in Table 7.2. These data indicate that in all three fields faculty members' ratings of physical and financial resources are associated with the department's peer ratings, the rating of programs from which members of the faculty obtained their doctorate, the program emphasis on preparing researchers, the faculty-perceived scholarly excellence of the program, salaries, size, and percent of faculty holding outside research grants (particularly in chemistry and psychology). Clearly, then, physical resources and facilities are seen to be more adequate at the more prestigious institutions which have established reputations for conducting research and advancing knowledge. It is worth noting, however, that better resources (again, as perceived by faculty) are also related to student-rated quality of teaching and faculty-reported

Table 7.2

Correlations of Faculty Ratings of Overall Physical and Financial Resources with Other Departmental Descriptors

	Correlations with faculty ratings of overall physical and financial resources in:		
Departmental descriptors:	Chemistry	History	Psychology
Peer ratings of quality of faculty (F-25)	61	67	61
Mean peer rating of program from which faculty received Ph.D. (F-15)	50	59	56
Program emphasis on preparing researchers (F-4-a)	63	71	61
Faculty self-perceived scholarly excellence (F-scale #1)	82	64	69
Mean salary--all department faculty (DP-1-6)	41	38	25
Number FTE graduate faculty (DP-1-2)	45	16	33
Percent of faculty with outside research grant (F-8)	74	19	75
Average per-student non-work-related support from university (DP-11)	26	44	-19
Student-rated quality of teaching (Student scale #7)	34	00	60
Program emphasis on preparing teachers (F-4-a)	36	-27	45

program emphasis on preparing teachers, at least in chemistry and psychology (see the last two entries in Table 7.2). This relationship is important. The fact that quality of resources and facilities is related to research emphasis and productivity will surprise no one; but the fact that it is also related to the instructional program, at least in chemistry and psychology, is a fact often overlooked. It appears that adequate laboratories and libraries are not only essential to conduct first-rate research, but also necessary to teach others how to do the same.

Problems in Obtaining Accurate Resource Information

Having introduced specific departmental resource indicators into the analyses--e.g., information regarding specific salaries, financial support for graduate students, percent of faculty holding grants from outside agencies, and the like--it would seem appropriate at this point to alert the reader to some of the methodological difficulties involved in obtaining accurate information on such indicators, along with corresponding warnings about the accuracy of such data.

Information about specific program resource indicators was obtained via the Department Profile Form (see Appendix D). Someone in each department--usually, but not always, the department chairman--was asked to provide fairly detailed information about a variety of financial variables, enrollment and staffing figures, faculty research activity, and the like. Obtaining complete and accurate information about some of these variables proved to be extremely difficult and where accurate data were finally obtained, it came at the price of a great deal more time and effort being expended by someone in the department than we had hoped or expected. Some of the information we sought was not available at all, some was available but not in the form in which it was requested (and therefore would have required even more time by the departments), some of it was available but incomplete, and finally, some of the information that was reported appeared to be inaccurate. Even such straightforward information as mean GRE scores of entering students, number of FTE students and faculty, percent of applicants who were accepted, and so on, suffered from one or more of these defects.

Probably the single biggest problem area had to do with finances, including such specific indicators as dollars available to students (for research and teaching assistantships, fellowships, and other forms of aid), dollars in grant money received by the faculty, and the department's success record with respect to obtaining grants, the latter including such figures as the percent of proposals from the department that received funds over a three-year period.

This logistic fact of life has obvious implications about the kind of information--and the level of detail required for that information--that can reasonably be sought in future efforts of this kind. It also has implications for the amount of confidence that we can place in the data we were able to gather, and in the corresponding correlations and other statistics computed with these data. We made every effort to check on the accuracy of questionable information and to clean up such messiness wherever it was suspected. Only items marked on the Department Profile form in Appendix D were used in data analyses. We think the resulting program resource and facilities information is reasonably accurate. We suspect that it is not as reliable, however, as information received from individual faculty members in each department.

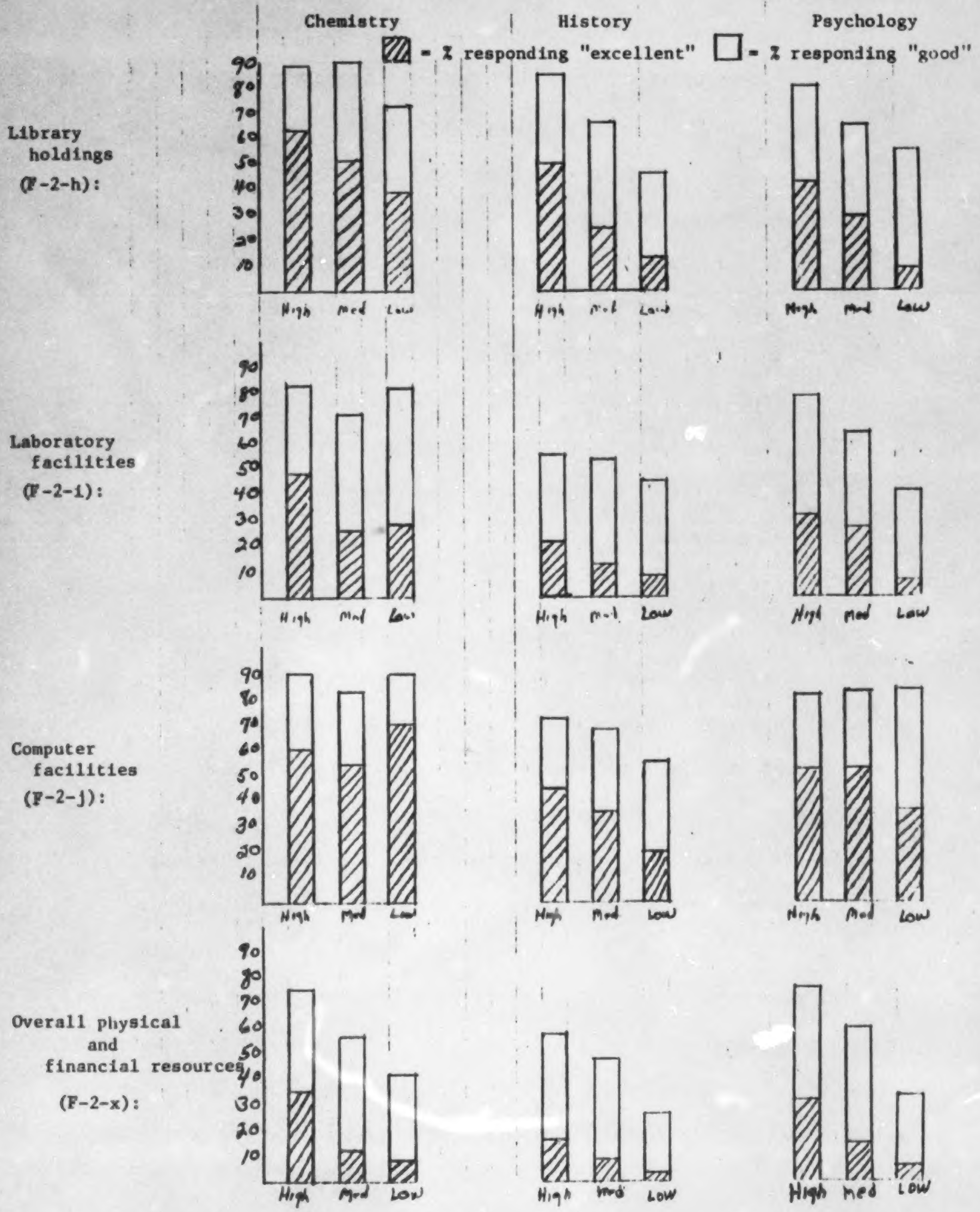
Quality of Resources and Reputational Ratings

As indicated in Table 7.2, a program's peer rating is fairly highly related to faculty ratings of the physical and financial resources in all three disciplines. But just what do these correlations mean in terms of levels of faculty satisfaction, both within and across disciplines? These data are summarized in Figure 7.1, and indicate that:

(1) With respect to library holdings, overall ratings appear to be highest in chemistry departments and slightly lower in history and psychology departments; in terms of differences within fields, peer rating seems to make the biggest difference in history (where a good or excellent rating is offered by 85% of the faculty in departments with high peer ratings, as compared to 46% in the low group) and the smallest difference in chemistry.

(2) With respect to laboratory facilities, overall level of satisfaction seems to be highest in chemistry and lowest (understandably) in history; in terms of

Figure 7.1. Summary of graduate faculty ratings of department facilities and resources, by discipline and peer rating.



differences within fields, the gap in quality of laboratory facilities is greatest in psychology (where 79% rate the facilities as either good or excellent in top-rated programs, compared to only 41% at departments with the lowest peer ratings) and, interestingly enough, appears to differ least among chemistry departments (though in the latter instance, the percent reporting the laboratory facilities to be "excellent" does differ considerably).

(3) Neither the differences between fields or differences within fields by peer-rating level are as great for computer facilities as they are for library holdings and laboratory facilities.

(4) Faculty ratings of overall physical and financial resources appear to be about the same for chemistry and psychology, but slightly lower in history; within-field differences by peer-rating level seem to be about the same in all three disciplines.

Besides examining closely the relationship between a department's peer rating and the quality of overall physical and financial resources, it might also be illuminating to study the relationship between peer ratings of faculty quality and a variety of other departmental indicators of the quality of facilities and resources. These data are presented in Table 7.3. Overall, they make it clearer why faculty members' ratings of the adequacy of the physical

Table 7.3

Correlations of Five Selected Resource and Facilities Variables with Peer Ratings of Quality of Faculty

	Correlations with peer rating in:		
	Chemistry	History	Psychology
Salary of full professors (DP-1-b)	78	54	48
Salary for all faculty in department (DP-1-b)	48	57	50
Percent faculty with outside research grant (F-8-1)	96	03	75
Average dollars (per faculty) external support for research (DP-4)	77	-07	81
Size: Number of FTE doctoral students (DP-5-e)	84	68	60

and financial resources are consistently higher at those programs with high peer ratings. Departments with higher peer ratings are also ones which have higher salaries (for both professors and all faculty), a higher percent of faculty with outside grants (both research and training grants, particularly in chemistry and psychology), and more grant money per faculty member from external sources (though not in history).

Quality of Resources and Faculty Performance

The data presented in Tables 7.1, 2, and 3 and Figure 7.1 lead to a better understanding of the nature of the quality of resources dimension. By examining the levels of faculty satisfaction with the various resources and faculties, as well as the kinds of departmental characteristics that tend to be associated with quality of resources and facilities, we now have a better understanding of the resources dimension and how it operates across disciplines.

But a very important question remains: How important are such resources and facilities to faculty performance? Or, to put the question another way, what evidence is there that faculty performance is associated with the quality of resources? Data relevant to this question are given in Table 7.4.

The research and scholarship measures include research or other scholarly articles published in the last three years, books published during one's entire career, presentations at colloquia and other scholarly meetings during the last year, and the Faculty Research Activity scale, which includes such activities as journal

Table 7.4

Correlations of Faculty Ratings of Overall Physical and Financial Resources with Six Performance Measures

	Correlations with ratings of quality of facilities and resources in:		
	Chemistry	History	Psychology
Research and Scholarship Performance Indicators:			
Articles in last three years (F-9-b)	56	09	30
Books: entire career (F-9-a)	34	26	38
Presentations: last year (F-11)	44	42	52
Research activity (F-scale #4)	75	66	71
Instructional Performance Indicators:			
Student rating of curriculum (S-scale #5)	40	00	60
Student-rated quality of teaching (S-scale #7)	34	00	60

editorships, journal article refereeing, and research or writing awards (for details, see Appendix D). The instructional indicators include student ratings of the curriculum and student ratings of the quality of teaching. In general, there are fairly consistent positive relationships between the various productivity indicators and faculty ratings of the overall physical and financial resources. Specifically:

. . . faculty ratings of a department's overall physical and financial resources are positively related to all four research and scholarly performance indicators in all three disciplines.

. . . faculty ratings of the overall physical and financial resources are also positively related to both instructional performance indicators in chemistry and psychology, but not in history.

. . . in general, the quality of a department's resources appears to be somewhat more important for the conduct of research and scholarship than for instruction, but the need for good facilities and resources nevertheless exists for both kinds of activities.

. . . in general, it would appear that adequate physical and financial resources are less crucial for either scholarship or instruction in history departments than in either chemistry or psychology; the correlations of ratings of facilities and resources with scholarship indicators are positive in history, but lower than for chemistry or psychology, and the ratings of resources and facilities are not even related to the two instructional performance indicators in history departments.

. . . the single research and scholarly productivity indicator which is most strongly correlated with faculty ratings of the physical and financial resources is the departmental research activity index, where the correlations are .75, .66, and .71 in chemistry, history, and psychology respectively.

Summary and Conclusions

The quality of a department's physical resources and facilities can be assessed in two ways. One is to obtain detailed facts about the specific facility or resource in question. This might be done by counting the holdings of relevant books in the library, calculating dollars available for research, perhaps measuring the square footage of laboratory space and computing a space to user ratio, and so on. A second way is to seek faculty and student opinion about the adequacy of the facilities. In this study some of both procedures were used. Student and faculty ratings of the adequacy of certain facilities and resources were obtained, and in addition we acquired information about certain specific resources of each program via the department profile form (see Appendix D). Our experiences in attempting to collect some of this information, our discussions with various program chairpersons or some other program representative, and our analyses of the data as presented in the preceding pages of this chapter, lead us to the following conclusions about the practicability and potential utility of alternative procedures for assessing the adequacy of program resources and facilities:

1) Student and faculty ratings of the adequacy of the resources are easy to collect, are reliable, and are related in expected ways to a number of departmental descriptors.
2) Faculty ratings of the adequacy of departmental resources are related to faculty research and scholarship performance in all three disciplines, and to several indicators of the quality of instruction in chemistry and psychology.
3) Obtaining certain detailed information from programs about their facilities and resources presents serious logistic difficulties; though accurate and complete detailed information of some kinds can probably be obtained, gathering it will almost certainly require a great deal of time and effort at most institutions, and even at that, it is doubtful that trustworthy information about certain specific resource variables (e.g., square footage of laboratory space or a dollar value attached to same) can ever be obtained across a large number of programs.
4) In view of the difficulties just discussed, it would seem that quality of resources and facilities might adequately be assessed through faculty ratings rather than through the expensive, time-consuming, and perhaps unreliable method of attempting to obtain specific, standardized measures of all relevant resources and facilities.

Chapter 8

QUALITY OF THE ENVIRONMENT

When discussed in connection with graduate programs, the concept of quality has been usually thought of in fairly narrow terms. It is charteristically defined in ways that emphasize the dimensions of selectivity and productivity, or, in economists' terms, faculty and student "input" and research "output." Viewed in this way, the "best" programs are those that recruit the most promising faculty and students, provide adequate resources, and produce a large number of highly-regarded scholarly contributions to the discipline.

For both students and faculty, however, the dimension of quality that seems to be generally ignored is one which might be regarded as the process dimension--that is, what is the nature and quality of the experience of being there? With respect to students, how much was learned, what sorts of attitudes toward the discipline were conveyed, was it exciting or boring, were the faculty accessible and supportive or unavailable and disinterested? With respect to the faculty, what was the quality of interpersonal relations, were new ideas supported or ridiculed, was the climate nurturant or anxiety-producing, and so on.

In her national survey, Clark (1973) found that these process descriptors are regarded as important by a large number of the country's graduate deans. Clearly, such dimensions have a direct bearing on the overall morale or esprit of a department, thereby affecting such important and basic characteristics as how pleasant it is to work and study there, the extent to which one's feelings of personal self-worth are not being challenged or doubted, and the degree of enthusiasm and/or excitement one gives to his or her work or studies. Beyond the immediate impact of such features, however, it is likely that such dimensions of a department have a more lasting and permanent impact on the future attitudes and dispositions of the students and faculty who spend time there. How graduate students are treated may well affect how they, in years to come, treat future generations of graduate students, and the extent to which members of the faculty find an environment that is collegial and supportive rather than competitive and cutthroat, may have long term effects on how they go about addressing research inquiries or other scholarly undertakings.

Environment Indicators

Two different kinds of information relevant to questions about the department environment were gathered. First, from the departmental profile forms departmental characteristics that are obviously related to the environment and might even be thought of as strong "shapers" of it were identified. Included here were such descriptors as size (defined several ways), sex mix among students, age of the faculty, and the like. We then obtained information, from both students and faculty, about their perceptions of the environment. As the reader will see, more emphasis is placed on this latter type of information--student and faculty perceptions--because it seemed that how people actually experienced the environment was what is really important, whatever else one might find out about the department descriptively.

Of the many items of perception information, analyses revealed some to be measuring sufficiently similar aspects of the environment so that they could be grouped together to form environment scales. There were two such scales for students--an *Environment for Learning* scale, consisting of six items, and a *Faculty Concern for Students* scale, formed by seven items. For the faculty, analyses turned up one grouping of six environment items which we termed the *Compatibility of Work Environment* scale. The general content of these scales was as follows:

Environment for Learning (for students)

1) Did departmental practices create a lot of tension in students?
2) Did graduate students have the feeling that they were being used or exploited by members of the faculty?
3) Did the graduate students perceive the department as being characterized by mutual respect and concern between students and faculty?
4) To what extent did graduate students tend to support and help each other meet the academic demands of the program?
5) To what extent did they support one another in their personal lives?
6) Was competition among students encouraged?

Faculty Concern for Students

To what extent were members of the graduate faculty:

1) accessible to graduate students?
2) helpful to students in identifying financial aid?
3) concerned for their professional development?
4) willing to offer guidance and assistance in the selection of courses?

5) willing to go out of their way to help students?
6) interested in the students' welfare?
7) helpful to students in finding appropriate jobs after completion of the degree?

Compatibility of Work Environment (for faculty)

1) To what extent were conflicting demands a source of personal strain?
2) Was there usually sufficient time available to give work the attention it deserved?
3) To what extent were the individual faculty member's views about graduate education compatible with the objectives and procedures of the department?
4) Would many members of the department move to another university if they had a reasonable offer?
5) Do members of the faculty have much opportunity to influence departmental practices and policies?
6) How well do members of the department get along with one another?

The specific item content of these scales, their location in the student and faculty questionnaires, and their various psychometric properties (e.g., inter-item correlations, item-scale correlations, reliability estimates) are presented in Appendix F.

In addition to these three scales, we included in our analyses other separate questionnaire items that dealt with various aspects of the environment but that did not fit into any of the aforementioned scales, either because of psychometric reasons (i.e., the item did not correlate with others in the scale) or their substantive content was not appropriate.

In examining the data pertaining to student and faculty environment information in this chapter, particular attention was given to facts that were helpful in answering four questions: (1) What is the meaning of the environment dimensions--that is, what aspects or features of the student and faculty environment seem to be defining the environment and would therefore appear to be important things to know about graduate programs if quality of environment is of interest? (2) What sorts of program or department characteristics tend to be associated with particular kinds of environments, especially characteristics that might reasonably be regarded as influencers of certain departmental environment characteristics? (3) What can be learned about graduate program environments that isn't already apparent on the basis of other already-available information about graduate programs? and (4) As a result of the infromation marshalled in attempting to answer the first three questions, what recommendations might seem to be reasonable ones to make about whether and how to assess the quality of environments in making judgments about program quality in graduate education? In attempting to address ourselves to these questions, we shall examine the data separately for students and faculty, except in those cases where faculty perceptions of the student environment are included.

The Student Environment

Data pertaining to the graduate student environment are presented in Tables 8.1, 8.2, and 8.3, and in Figures 8.1 and 8.2 The information in Tables 8.1 and 8.2 are particularly relevant to the questions posed earlier about the meaning of the environment dimension and its correlates.

First, it is evident that the two student environment scales are fairly highly correlated with each other. That is to say, departments where there is a high faculty concern for students also tend to be ones where students perceive the learning environment favorably and vice versa. Beyond this, both scales are consistently positively correlated with how members of the faculty perceive the "humaneness" of the department and the quality of faculty-student relations. And finally, both student environment scales are negatively correlated with faculty perceptions of the extent of professorial exploitation of graduate students. That is, where such exploitation is high, the student environment, as measured by these scales, is low. Note also that the differences among disciplines on these five environment indicators are generally negligible as evidenced by the very similar means. Only in the case of faculty exploitation of students to advance their own research (variable number five in Table 8.1) is there any sizable difference. In this case, less exploitation of students is perceived in history, where of course the individual nature of research and scholarship (as opposed to the more group or team-oriented research in chemistry and psychology) is probably a major factor accounting for the difference.

The Table 8.1 correlations, along with the specific item content and the inter-item correlations that went into the construction of these two scales in the first place (again, see Appendix F), lead to the conclusion that the environment dimensions measured by these scales are homogeneous (that is, consist of a number of departmental features that "belong together") and are related in expected ways with faculty perceptions.

Table 8.1

Intercorrelations Among Several Indicators of Graduate Student Environment

		Intercorrelations:					
		1	2	3	4	Mean	S.D.
1. Student scale #1: Environment for Learning	C[a]	-				2.74[b]	.20
	H	-				2.81	.21
	P	-				2.79	.23
2. Student scale #4: Faculty Concern for Students	C	55	-			2.64[b]	.17
	H	81	-			2.72	.23
	P	55	-			2.71	.20
3. This department has humane environment as perceived by faculty (F-1-m)	C	63	50	-		2.97[c]	.39
	H	28	09	-		3.08	.27
	P	73	51	-		2.87	.41
4. Quality of faculty/student relations as perceived by faculty (F-2-d)	C	62	52	87	-	3.01[b]	.31
	H	56	54	74	-	2.92	.23
	P	70	53	93	-	2.91	.35
5. Some professors unduly exploit graduate students, as reported by faculty (F-1-f)	C	-42	-08	-60	-43	2.18[c]	.40
	H	-08	-13	-59	-32	1.49	.23
	P	-43	-54	-55	-48	2.19	.31

[a] C = Chemistry, H = History, P = Psychology

[b] 4 = Excellent, 3 = Good, 2 = Fair, 1 = Poor

[c] 4 = Agree strongly, 3 = Agree with reservations, 2 = Disagree with reservations, 1 = Disagree strongly

How do they relate to other departmental information? More specifically, what kinds of programs tend to be high and low on these dimensions? The data in Table 8.2 begin to give some clues. First, the two variables that correlate most highly with the student environment scales both have to do with teaching. Specifically, student-rated quality of teaching and faculty-perceived emphasis on teaching, variables 7 and 9 respectively in Table 8.2, are both positively correlated with both environment dimensions in all three fields. Conversely, such departmental descriptors as size, selectivity, program emphasis on research, reputational rating of programs from which departmental faculty received their doctorates, and reputational rating of quality of graduate faculty--these characteristics are either not correlated with the student environment scales, or in some instances (and occasionally in one or two disciplines) are negatively correlated. To put these findings another way, it would appear that departments that place emphasis on teaching fairly often turn out to be departments in which students are generally satisfied with the learning experience, and departments which have gained national acclaim for the quality of their faculty and their record of research tend to be departments in which there is less student satisfaction with the environment, but the latter association is less firm. In all three disciplines, some of the departments with very high reputational ratings are also ones with high scores on the student environment scales.

Table 8.2

Correlations of Two Student Environment Scales with Various Departmental Descriptors

	Environment for Learning			Faculty Concern for Students		
	Chem	Hist	Psych	Chem	Hist	Psych
1. Peer rating of quality of graduate faculty (F-25)	-13	-48	02	-15	-39	08
2. Size: FTE doctoral students (DP-5-2)	-24	-46	-04	-01	-33	15
3. Faculty/student ratio	18	34	16	-08	23	-15
4. Percent of students who complete degree (DP-9)	-34	31	27	08	23	26
5. Student-perceived scholarly excellence of doctoral program (Student scale #2)	25	36	44	29	49	53
6. Faculty-perceived scholarly excellence of doctoral program (Faculty scale #1)	17	-21	30	15	-14	46
7. Student-rated quality of teaching (Student scale #7)	52	63	58	76	81	75
8. Program emphasis on research (as perceived by faculty) (F-4)	-05	-42	10	-05	-32	28
9. Program emphasis on teaching (as perceived by faculty (F-4)	31	49	17	20	58	36
10. Percent of faculty with outside research grant (F-8-1)	08	-18	-08	-14	04	04
11. Average faculty publications in last three years (F-9)	-16	-25	15	-13	-21	-14
12. Admissions selectivity (DP-10)	-22	-25	-25	00	16	10
13. Percent of doctoral students who received some form of financial assistance (DP-11)	-04	53	-09	-11	42	14

These tendencies are hopefully made clearer by the illustrations in Figures 8.1 and 8.2. In these two figures, scatterplots depicting the relationships between department reputational ratings (across the horizontal) and student Environment for Learning scores (on the vertical) are presented for chemistry (Figure 1) and history (Figure 2). (These figures are presented for illustrative purposes. Thus, similar data for psychology departments, though available, are not presented.) In each figure, lines representing the means on both variables have been drawn, and, as in earlier sections of this report, departments are represented by letters. Thus, departments with high "scores" on both Reputational Rating and Environment for Learning will be found in the upper right-hand quadrant, those with low scores on both variables in the lower left-hand quadrant, and so on.

If we examine the chemistry department data in Figure 8.1, some subtleties of the relationship between these two dimensions becomes clearer. First, as indicated by the correlation coefficient (-.13), there is a very slight tendency for departments with higher reputational ratings to have somewhat lower student-perceived environments for learning, at least for the 24 chemistry departments in our sample. But this tendency is very weak, and it is clear that knowing a department's status with respect to its reputational rating doesn't permit a very accurate prediction of its status with respect to its environment for learning and vice versa. Indeed, of the two chemistry departments with the highest reputational ratings (departments P and U), department P has one of the lowest rated environments for learning, whereas department U has one of the highest.

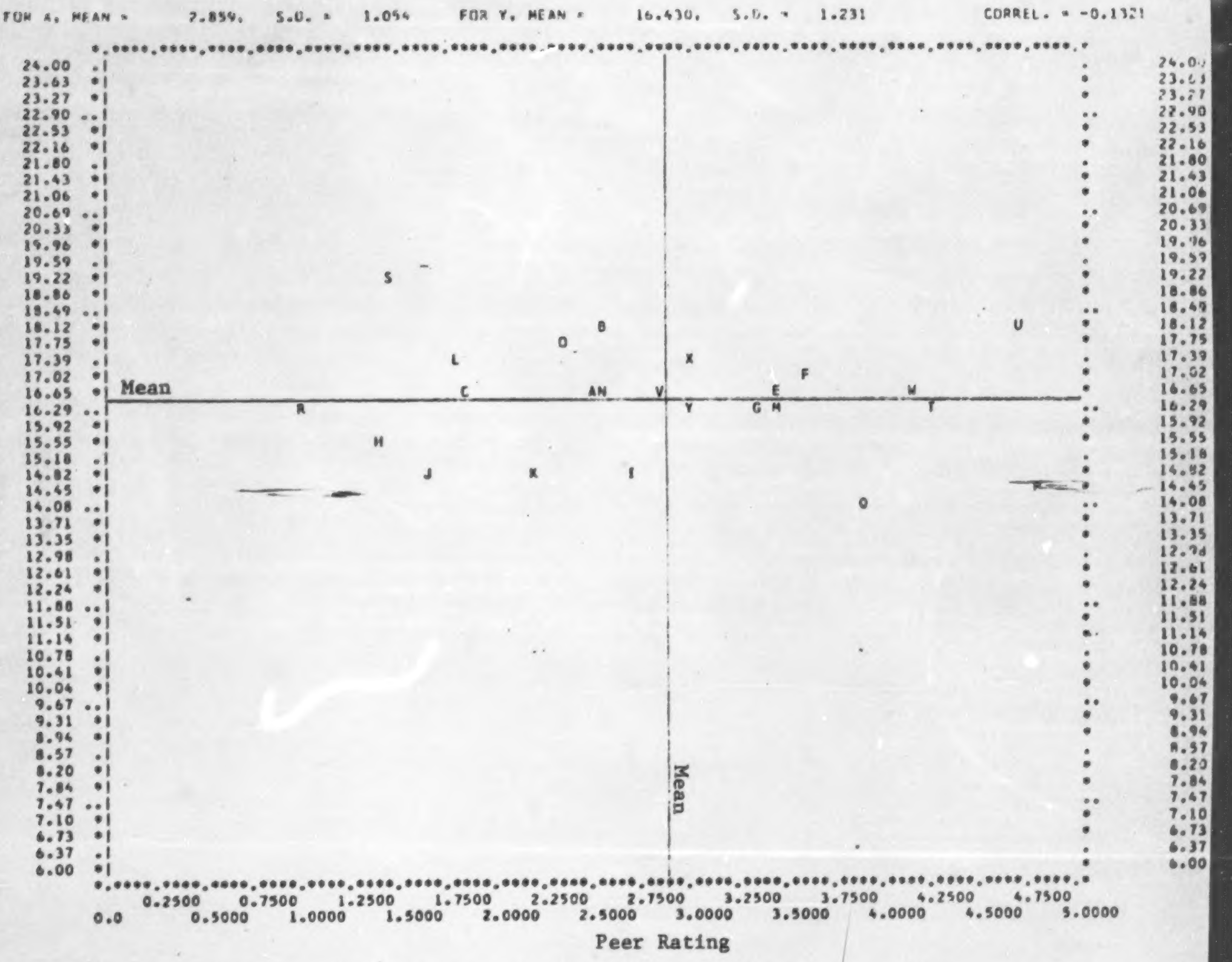


Figure 8.1. Scatterplot for Relationship Between Departments' Peer Rating and Environment for Learning Scores in Chemistry

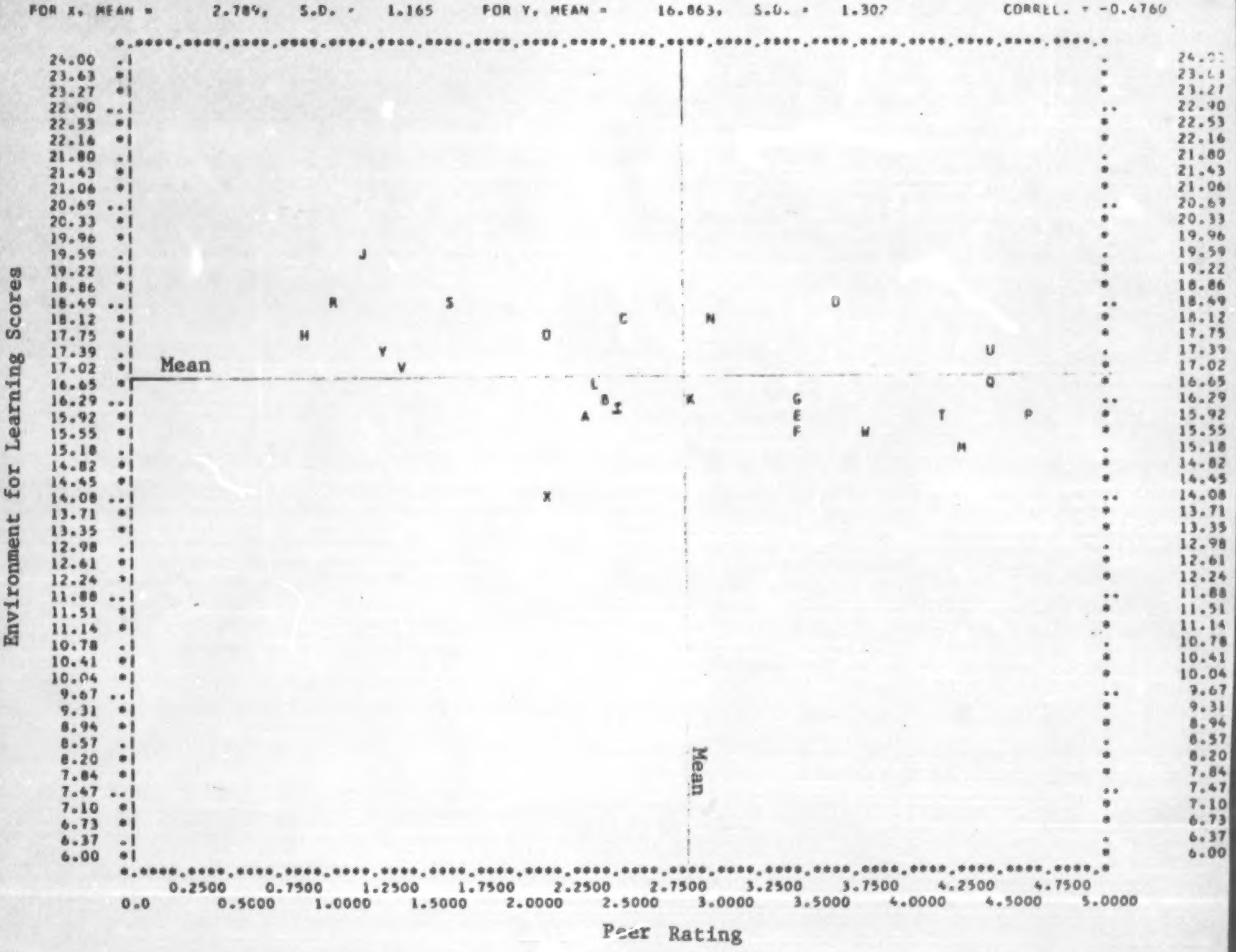


Figure 8.2. Scatterplot for Relationship Between Departments' Peer Rating and Environment for Learning Scores in History

Even where the relationship between the variables is stronger--as is the case for the same two characteristics in history departments, as portrayed in Figure 8.2--there are numerous cases in which departments' status on the two variables in question do not conform to the tendency for the total group. Thus, though there is an even stronger tendency in history departments for those with higher reputational ratings to have lower Environment for Learning scores (as expressed by the -.48 correlation), we see that departments N, D, and U have high reputational ratings and high learning environment scores, whereas history departments L, B, A, and X are below the mean on both characteristics.

Thus, we have learned several things about the nature of the department environment that are important: first, such subtle environmental characteristics can be measured fairly accurately and reliably; second, the quality of the environment can be measured with "validity," in that data obtained about the environment correlate in expected ways with other information available about departments (e.g., emphasis on teaching, size); and third, in spite of the correlations with other departmental characteristics, the quality of the environment is something which cannot be easily determined simply by knowing, for example, that the department is big, or that it emphasizes research, or that it is very selective. Though such factors are related to the environment dimensions, the relationships are such that the quality of the environment is different from these things.

One other point about the student environment is worth making. Though our understanding of the nature of the environment leads us to feel confident that it functions pretty much in the same ways across each of the three disciplines in our study, the magnitude of the relationships varies. Thus, though the quality of the environment is viewed more favorably by graduate students in those departments where teaching is emphasized in all three disciplines, that relationship is more pronounced in the history departments. Conversely, though the tendency for the quality of the environment to be lower in departments that are large and emphasize research holds for all three disciplines, these relationships are again consistently stronger in history than in chemistry or psychology. We might say that the quality of the graduate student environment is more predictable in history than it is in the other fields. Unfortunately, there is nothing in our data that enables us to explain this phenomenon, and this would not seem to be the proper forum for speculation. But these facts do alert us to the complexities of the environmental assessment problem. The procedures used in our study seem to be appropriate for use in all three fields, but the strengths of their relationships with other departmental factors clearly cannot be generalized across fields.

So that the reader can examine the extent of student endorsement of the various items that were employed in our analysis of the student environment (including items in the two student environment scales), a summary of these data, presented separately by discipline and by three reputational-ratings groupings, is given in Table 8.3.

Table 8.3

Descriptors of the Quality of the Graduate Student Environment

(Average of Program Percentages)

	Chemistry			History			Psychology		
Peer Rating	High	Medium	Low	High	Medium	Low	High	Medium	Low
Environment for Learning: (Percent answering "Agree Strongly")									
Dept. practices create student tension (S-1-j)	18	13	16	15	16	9	14	17	23
Common for students to feel exploited (S-1-g)	12	13	6	9	7	6	6	8	9
Dept. has humane environment (S-1-i)	11	19	19	19	19	43	21	13	11
Students support and help each other academically (S-1-q)	23	31	41	22	18	30	22	27	38
Competition among students encouraged (S-1-p)	13	13	9	15	10	8	13	11	5
Students friendly and supportive in personal lives[a] (S-6-g)	31	35	46	27	29	39	25	36	36
Faculty Concern for Students: (Percent answering "Excellent")									
Accessibility to students (S-2-a)	31	38	41	38	39	64	27	38	39
Helpfulness in identifying financial aid (S-2-b)	20	20	12	14	12	22	25	30	12
Concern for professional development (S-2-d)	20	19	18	27	23	31	31	25	29
Guidance in selection of courses (S-2-e)	4	7	19	10	12	17	7	8	7
Willingness to go out of way to help (S-2-f)	22	28	35	34	36	41	27	30	32
Interest in students' welfare (S-2-1)	8	10	6	14	10	26	9	13	15
Helpfulness in finding jobs after degree (S-2-m)	18	10	11	17	6	16	27	10	12
Miscellaneous (Percent answering "Agree Strongly")									
Dept. is stimulating place to study (S-1-t)	23	15	9	30	15	29	31	14	10
Faculty genuinely interested in students' welfare (F-1-b)	42	40	30	48	43	40	37	41	39
Some professors unduly exploit students (F-1-f)	12	13	15	4	2	2	7	11	7
Faculty/student relations[b] (f-2-d)	33	21	14	20	17	20	16	20	21

[a] Percent indicating statement characterized more than 75 percent of students in department.

[b] Percent answering "excellent."

These data enable the reader to get a general picture of the level of student satisfaction with various important elements of the environment dimensions, compare these levels of satisfaction with those of students at departments of other reputational ratings within their own field, and finally, to compare the data across disciplines. In this last respect, it is worth noting that overall levels of student satisfaction with their environments do not appear to differ greatly among the three disciplines in the study.

The Faculty Environment

Data pertaining to the faculty environment are presented in Tables 8.4 and 8.5 and in Figure 8.2. The data in Tables 8.4 and 8.5 are particularly helpful in giving us a better understanding of the meaning of the faculty environment dimension.

The Faculty Compatibility scale (whose general content was described earlier in this chapter, and whose specific details are available in Appendix F) is positively correlated, for all three disciplines, with such other environment indicators as the extent to which different scholarly points of view are welcome, the extent of faculty involvement in the governance of the department, the quality of faculty-student relations in the department, the "humaneness" of the department, and both the departmental and university-wide intellectual environment. On the other hand, the Compatibility scale is negatively correlated in all three disciplines with the extent to which faculty members perceive the department to be a collection of individuals and a place where little or no team

Table 8.4

Intercorrelations Among Several Environmental Indicators for Faculty

		1	2	3	4	5	6	7	8	Mean	S.D.
1. Compatibility of faculty work environment (Faculty scale #2)	C[a]	-								2.81[b]	.30
	H	-								2.89	.18
	P	-								2.83	.22
2. Different personalities and scholarly points of view are welcome (F-1-c)	C	86	-							3.25[c]	.38
	H	41	-							3.35	.29
	P	50	-							3.18	.30
3. Wide faculty involvement in important departmental decisions (F-1-e)	C	78	80	-						3.10[c]	.61
	H	52	64	-						3.24	.49
	P	43	-15	-						3.07	.41
4. Department has humane environment (F-1-m)	C	72	72	56	-					2.97[c]	.39
	H	69	55	51	-					3.08	.27
	P	87	51	26	-					2.87	.41
5. Faculty/student relations in department (F-2-d)	C	53	51	37	87	-				3.01[b]	.31
	H	27	33	13	74	-				2.92	.23
	P	81	46	22	93	-				2.91	.35
6. Department really a collection of individuals; no truly team efforts (F-1-n)	C	-61	-58	-66	-55	-49	-			2.55[c]	.53
	H	-27	-16	-40	-48	-38	-			2.61	.35
	P	-65	-17	-24	-73	-77	-			2.55	.43
7. University intellectual environment (F-2-a)	C	52	45	29	23	19	-02	-		2.89[b]	.53
	H	40	36	30	09	-10	-18	-		2.79	.48
	P	38	31	12	23	06	16	-		2.90	.46
8. Department intellectual environment (F-2-b)	C	88	81	63	70	54	-56	56	-	3.06[b]	.53
	H	67	62	48	52	19	-34	59	-	3.09	.37
	P	67	45	10	57	53	-35	65	-	3.12	.35

[a] C = Chemistry, H = History, P = Psychology.

[b] 4 = Excellent, 3 = Good, 2 = Fair, 1 = Poor.

[c] 4 = Agree Strongly, 3 = Agree with reservations, 2 = Disagree with reservations, 1 = Disagree Strongly.

efforts take place, though again the correlations are lowest for history departments where, as we mentioned previously, the nature of the research and scholarship activities simply are not well-suited to team efforts in the way they are in the other two disciplines. In any event, these general relationships are consistent across all three disciplines and of such a magnitude and consistency that they give us confidence in the "validity" of the faculty environment dimension.

What other departmental characteristics tend to be associated with the quality of the faculty environment? Data relevant to this question are given in Table 8.5, where the Faculty Compatibility scale and faculty perceptions of the department intellectual environment are examined in relation to a variety of other departmental descriptors. These data indicate that:

...unlike the student environment, the quality of the faculty environment is positively correlated with faculty reputational ratings, an emphasis on research, and a record of research productivity in all three disciplines.

...the faculty environment quality is also quite highly related to faculty perceptions of the scholarly excellence of the program, a dimension which includes faculty ratings of student competence (for details see Faculty Scale #1, in Appendix F).

...judgments about the faculty environment are positively correlated with faculty satisfactions with the physical and financial resources of the place, as well as the age of members of the department (as measured by years since receiving the doctorate).

Table 8.5

Correlations of Two Faculty Environment Indicators with Various Department Descriptors

	Compatibility of Fac. Work Environ. (Faculty Scale #2)			Department Intellectual Environ. (F-2-b)		
	C[a]	H	P	C	H	P
1. Reputational rating of quality of graduate faculty (F-25-a)	48	37	25	58	71	64
2. Mean reputational rating of departments from which faculty received doctorate (F-15)	42	56	31	45	70	60
3. Average annual productivity of articles (F-9-b)	40	19	08	55	37	31
4. Program emphasis on research (F-4-a)	64	50	19	74	75	56
5. Self-perceived scholarly excellence of Ph.D. program (Faculty Scale #1)	81	58	57	92	82	91
6. Faculty ratings of adequacy of physical and financial resources (F-2-x)	65	47	38	79	54	58
7. Size: FTE graduate faculty (DP-1-e)	19	10	02	33	42	34
8. Percent of faculty with tenure (F-17)	-04	18	06	-10	19	-02
9. Years since receiving doctorate (F-14)	24	47	31	35	27	29

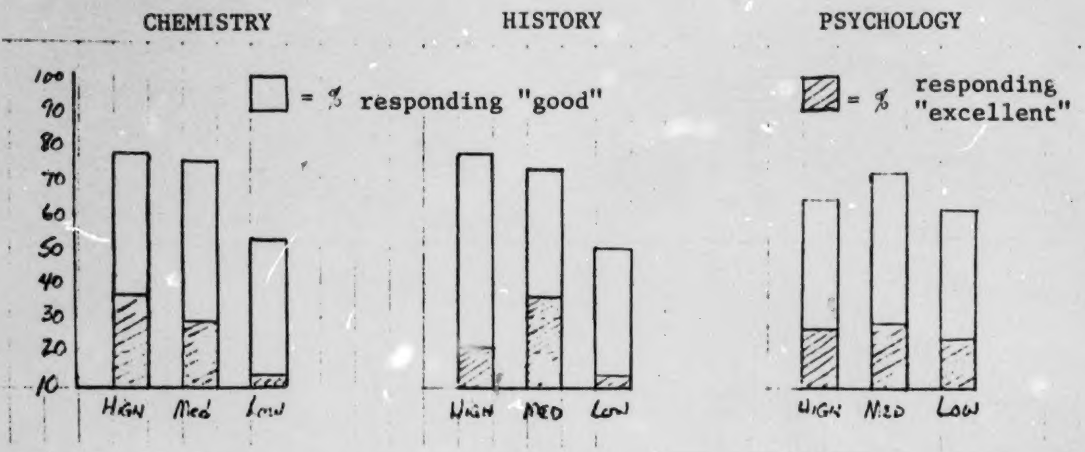
[a] C = Chemistry, H = History, P = Psychology.

> ...but faculty environment is not associated, at least in a very consistent or dramatic way, with such departmental characteristics as size, or the percent of faculty holding tenure.

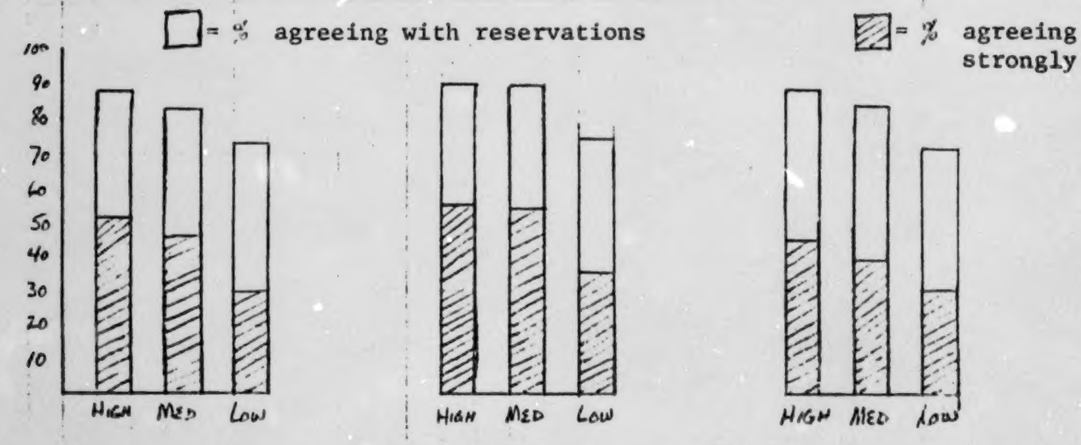
When compared with the data pertaining to the quality of the student environment discussed earlier in this chapter, it is clear that the quality of the faculty environment is based on different features of the environment. Whereas favorable student perceptions seemed to be characteristic of departments that emphasized teaching, favorable faculty perceptions of the environment are obviously (and not surprisingly) associated with an emphasis on research, first-rate facilities, and peer ratings of the quality of the faculty. Thus, departments with favorable climates for the faculty are not always departments with environments that are perceived favorably by students. In fact, it would appear that in some cases the very features of the environment that make for a desirable department for members of the faculty often operate to have a negative effect on the quality of the environment for students. Only in psychology does it appear that student and faculty perceptions of the environment tend to "go together," and even here the relationship is not strong.

Correlational data, necessary to explore the ways variables relate to others, tell us nothing about the distribution of those characteristics among the departments in question. Some of this information is included in Figure 8.3, in which faculty ratings of a variety of environment features are summarized, and permit a

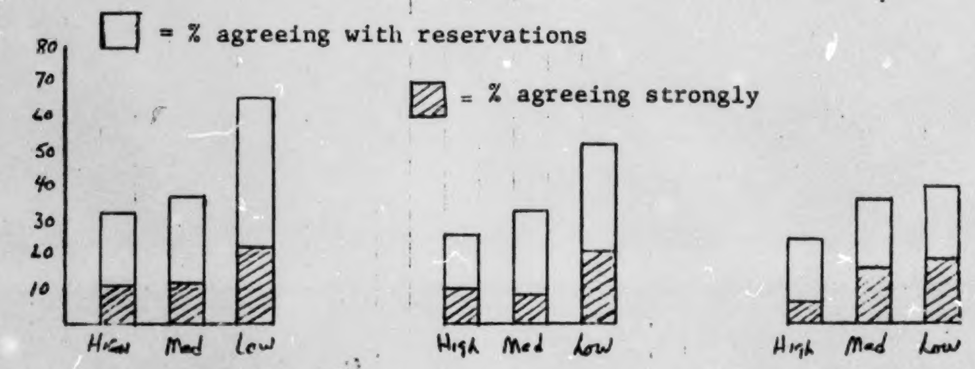
Figure 8.3. Summary of Various Environmental Indicators for Faculty, by Discipline and Reputational Rating



Personal relations among faculty in department (F-2-c).

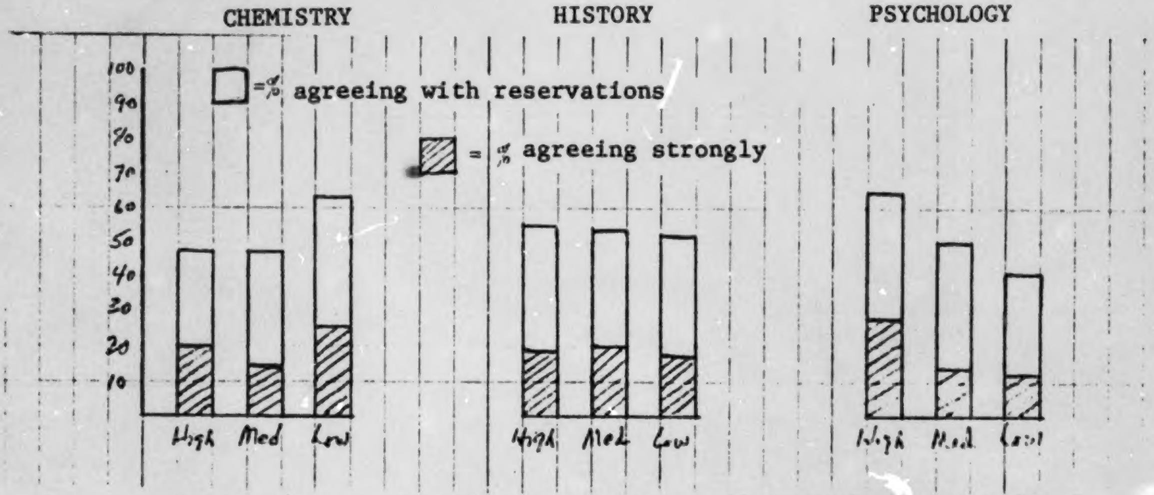


Different personalities and scholarly points of view are welcome (F-1-c).

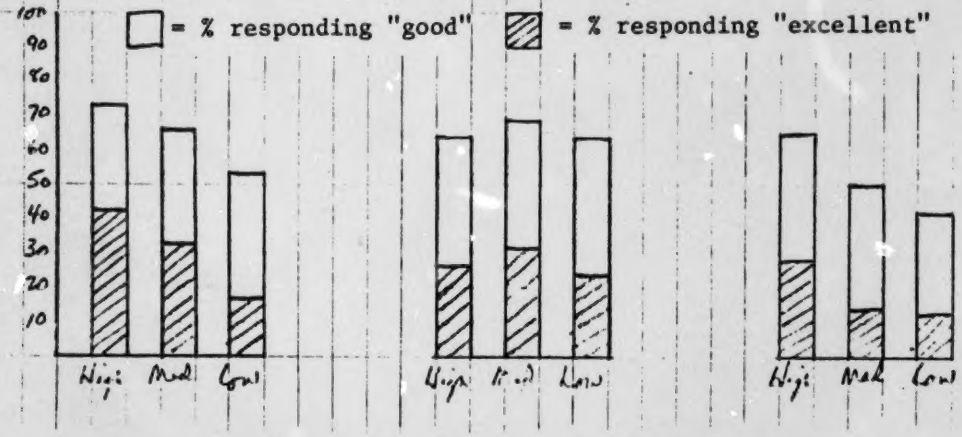


If I had a reasonable offer, I would move to another university (F-1-i)

Figure 8.3. (Continued)



This department is really a collection of individuals; very little in the way of truly team or joint effort takes place...(F-1-n)



Departmental effort toward the career development of junior faculty (F-2-w).

comparison of data both across disciplines and within discipline by reputational rating. For example, with respect to personal relations among the faculty in the department, represented in the first set of bar graphs in Figure 8.3, we can see that the overall level of personal relations appears to differ very slightly among the disciplines, but differs fairly substantially within discipline by reputational rating level, at least for chemistry and history departments. (As an aside, it is interesting to note that in no case are faculty personal relations regarded as being excellent by as many as 40% of the faculty.)

Interpretations of the other data presented in Figure 8.3 are that:

...different personalities and scholarly points of view are almost always welcome; there are no meaningful differences across disciplines, and though such openness is less characteristic of departments with lower reputations than higher ones, this difference is not great.

...interest in moving to another institution is consistently greater among departments at the low end of the reputation scale in all disciplines, with leanings in this direction being greatest in chemistry departments.

...a sense of colleagueship (joint effort) occurs with approximately equal frequency across disciplines; within disciplines, reputational rating makes the greatest difference in psychology, where 65% of the faculty in top-rated programs agree (strongly or with reservations) that team efforts rarely take place, compared to 41% at departments with the lowest reputations.

...development of junior faculty seems to be most frequent in chemistry departments, least frequent in psychology departments; within disciplines, such development is more likely to occur in highly rated programs in chemistry and psychology, but reputational rating does not seem to make much difference in history.

Summary and Conclusions

The quality of the student and faculty environment, a dimension of graduate education that is usually ignored, was endorsed by a national sample of graduate deans as being a characteristic that is important to considerations of program quality. In this study we measured student and faculty perceptions of their departmental environments by means of questionnaires that sought information about faculty accessibility, interest in student welfare, extent to which competition among students is encouraged, quality of faculty interpersonal relations, extent of faculty opportunity to influence departmental decisions, and the like. These data indicate that:

...the quality of the student environment seems to be largely a "humaneness" dimension, in which students perceive a receptive faculty who are interested in the students' welfare and give attention to teaching. In chemistry and psychology, this type of environment does not appear to be related to such traditional indicators of departmental quality as reputational ratings, publications, and the like. In other words, humane environments are found approximately as often among prestigious departments as lesser known ones in these fields. In history departments, however, favorable student environments are less likely to be found in departments with strong reputations and a heavy research orientation.

...the quality of the faculty environment, on the other hand, is associated with reputational ratings, program emphasis on research, quality of the facilities, and the like, a clear indication that what is important to the faculty is not always what is important to graduate students; the faculty environment may not exactly ignore the "humaneness" concept, but it does not emphasize it.

...the measures of environment used in this study appear to be reliable and "valid," and to provide useful information about student and faculty environments in all three disciplines.

Chapter 9

PROGRAM CONTENTS AND PROCEDURES

The preceding chapters have been concerned primarily with the human aspects of doctoral degree programs and with the adequacy of the programs' physical resources. For some people, this is sufficient to assure an educational experience; bring good minds together, they say, and quality education will take place. But doctoral programs at most universities would not exist without much more structure than this simple formula suggests. What about courses, requirements, examinations, supervised research, and supervised work experience? These aspects of a program express its purposes, make up a large part of the learning experiences of students, and provide the mechanism for certifying those who will be awarded a degree. No assessment of program quality would be complete without considering its formal structure of learning experiences and procedures.

Though curriculums vary within a discipline as well as between disciplines, it is possible to ask some general questions about any program's academic offerings and procedures. Do the academic offerings, whatever they may be, seem to meet the needs of the students who are enrolled? Do students and faculty think the requirements are appropriate? Are requirements fairly administered? Is student academic work evaluated fairly and appropriately? Would students recommend the program to others with similar interests and abilities? Such questions concern the integrity and fairness of a program's operation rather than its scholarly excellence per se; they ask about the quality of experiences within a program, regardless of the faculty's publication record or students' test scores. Thus, they focus on aspects of programs that are different from areas reported in the earlier chapters, and broaden our view of program quality to include process as well as scholarly input and output.

Two major reservations have been expressed about the use of average participant ratings to represent the quality of a program's functioning. The first question concerns the reliability of the measures, since it is likely that there is some difference of opinion within a program about the "fairness" or "appropriateness" of particular procedures. Such differences among respondents within a program could result in bland program averages that cover up internal problems and result in little difference, or random difference, between programs. Because of this possibility, we will be particularly interested in the psychometric characteristics of these measures, especially the comparison of response variation within and between programs. At the individual program level, it is particularly important to look at the distribution of item responses when interpreting results in this area, in order to get the full flavor of respondent opinion.

The second reservation is more difficult to deal with, because it questions the appropriateness of participant judgments in this area. Are students, even advanced doctoral students, qualified to make judgments about the quality of their educational experience?

Can faculty members honestly judge the quality of a program they helped shape? Obviously there are no simple answers to such questions. Responses to opinion surveys do sometimes reflect anger, fear, or desire to make a program look good. Also, the validity of responses to questions about current program operation may vary depending upon the perceived use of the information, with perhaps less openness or honesty if program survival is in question. We would only point out that interviews with students and faculty members have the same weaknesses and, in addition, tend to reflect the opinions of only a few of the participants. A high response rate on a well-designed survey instrument offers the potential of feedback from a much larger and more representative sample of participants, and therefore the possibility of greater reliability. Particularly in areas such as program functioning, evaluators should give close attention to response rates and should pursue inconsistent results for individual departments with more detailed program information or interviews. With appropriate cautions, the approach should contribute to our overall understanding of quality in doctoral education.

In summary, judgments about current program operation were investigated because it is difficult to believe that a program is academically excellent if students and faculty are seriously dissatisfied with its content and procedures, even though other measures are high. On the other hand, high satisfaction with the academic program may reflect modest expectations and could be quite consistent with lower measures in other areas.

Judgments About the Academic Program

Six aspects of a program's academic structure were identified by graduate school deans as important to know about when making judgments about program quality. These were courses and other curricular offerings, evaluation of student progress, degree requirements, assistantships and other work-related student experiences, relationships with cognate programs within the university, and job placement of graduates. In addition, the deans endorsed a measure of overall student satisfaction with the education they are receiving.

Items concerning these areas were included on the student, faculty, and alumni questionnaires; respondents made judgments about each item on a four-point scale from "excellent" to "poor." Items concerning the same area were then grouped and the scores combined to form one scale score to represent the program level in that area. The six scales that demonstrated adequate reliability, homogeniety, and discrimination between programs (see Appendix F) were:

1. Student rating of the curriculum. Is the program flexible enough to meet individual student needs? Is the curriculum of sufficient breadth and depth? Does the structure or sequence of courses follow logically? Is there sufficient opportunity for independent study? Is there opportunity to take courses outside the major field, and are relationships good with other departments? (Student Scale No. 5)

2. Student rating of the relevance of degree requirements. Are requirements clearly stated, relevant to admissions requirements

and department objectives, and relevant to anticipated work in the field? Are qualifying exams administered fairly? Are language requirements and required courses in other fields appropriate? (Student Scale No. 6)

3. Quality of student experiences as a research or teaching assistant. Do assistantships contribute to student academic development? Do they give students a chance to act in a professional role? Is the work relevant to anticipated later professional duties? Are assistants treated as colleagues by members of the department? Are assistantships fairly administered, and are there enough of them at adequate pay? Is there good supervision? Is there sufficient office space and equipment? (Student Scale No. 8)

4. Student overall satisfaction with the program. Do students feel they are getting good preparation for their later professional work? Do they think they have learned a great deal in the program? Would they advise a friend with similar interests to enroll in the program? Would they transfer if they could do so without losing much time to the degree? (Student Scale No. 3)

5. Faculty judgments about the adequacy of student evaluation procedures. Are degree requirements administered fairly? Does the department have good procedures for evaluating student progress toward the degree, evaluating comprehensive exam performance, and supervising dissertations? (Faculty Scale No. 6)

6. Alumni satisfaction with dissertation experiences. Did the student have sufficient freedom to select his or her own topic? Was the expected scope of the research problem satisfactory? Were procedures for selecting committee members and arrangements for interaction with the committee satisfactory? Was there sufficient opportunity for the student's creative thinking and individual expression? Was the dissertation experience related to other professional skills and to career plans? (Alumni Scale No. 1)

Table 9.1 presents correlations among the six scales by discipline, and also the average department mean score and the standard deviation of variation in program scores for each scale. The means and standard deviations of the first three scales suggest that the students in most programs in all three disciplines rate program contents and procedures "fair" to "good"--a range of roughly 2.2 to 3.1 when a "fair" rating is scored 2 and a "good" rating is scored 3. Though the differences between programs are not large, the statistical analyses of the scales indicate that they are stable and significant. In general, students rate their personal satisfaction with the program "good" (table item no. 4) and alumni average a high level of satisfaction with their dissertation experiences (item no. 6, where "satisfactory as is" was scored 3 and "could be improved" was scored 2). The scales appear to operate very similarly in each of the three disciplines, even though the content of the curriculum and exact program procedures are quite different.

Table 9.1

Intercorrelations of Scale Scores Concerned with Judgments about Program Contents and Procedures

		Intercorrelations						
		1	2	3	4	5	Mean[b]	S.D.
1. Rating of curriculum (Student scale #5)	C[a]	--					2.69	.16
	H	--					2.90	.21
	P	--					2.76	.26
2. Rating of relevance of degree requirements (Student scale #6)	C	44	--				2.79	.21
	H	70	--				2.91	.19
	P	63	--				2.88	.20
3. Rating of assistantship experience (Student scale #8)	C	25	30	--			2.70	.17
	H	30	39	--			2.68	.26
	P	67	65	--			2.68	.28
4. Satisfaction with program (Student scale #3)	C	49	46	59	--		3.05	.20
	H	75	69	40	--		3.13	.23
	P	70	61	44	--		3.10	.28
5. Adequacy of evaluating students (Faculty scale #6)	C	02	13	40	40	--	2.98	.28
	H	-14	23	13	06	--	2.95	.20
	P	36	60	31	47	--	2.98	.20
6. Satisfaction with dissertation experiences (Alumni scale #1)	C	12	04	19	40	[illegible]1	2.58	.11
	H	21	20	-38	50	48	2.63	.11
	P	53	43	15	18	-00	2.65	.10

[a] C = Chemistry, H = History, P = Psychology.

[b] Mean of department means. 4 = Excellent, 3 = Good, 2 = Fair, 1 = Poor, except for item #6 where 3 = Satisfactory as is, 2 = Could be improved, 1 = Needs substantial revision.

The correlations in Table 9.1 indicate that all of the scales are positively related to one another, with a particularly strong relationship among student judgments about various aspects of the program operation. Program flexibility, course offerings, and relevance of degree requirements appear to be especially important to student overall satisfaction with the program in history and psychology, whereas assistanship experiences are more important to student overall satisfaction in chemistry. Faculty satisfaction with the departmental practices for evaluating students are positively but much less strongly related to student judgments about the program, particularly in history. Alumni judgments about dissertation experiences are not related in any consistent way with the other ratings. On balance, the six scales seem to "hang together" as measures of an important area of program excellence, through low relationships between student measures and measures from the different perspectives of faculty and alumni raise some questions that need further exploration.

Correlates of Program Ratings

How do measures of current program functioning relate to other indicators of program quality? Table 9.2 looks at the relationship between three student ratings of the program (curriculum, degree requirements, and overall satisfaction) and other program descriptors selected because they seem logically related to program operation or because earlier chapters identified them as particularly good

Table 9.2

Correlates of Three Student Ratings of the Program

	Rating of Curriculum			Rating of Degree Requirements			Satisfact with Prog	
	C	H	P[a]	C	H	P	C	H
1. Quality of teaching (Student scale #7)	54	80	74	72	75	70	68	89
2. Environment for learning (Student scale #1)	29	51	46	40	61	30	49	54
3. Student-rated scholarly excellence of the program (Student scale #2)	39	70	79	25	74	70	69	87
4. Reputational rating of quality of the graduate faculty (F-25)	18	01	67	02	19	68	36	24
5. Size: FTE doctoral students (DP-5-2)	25	20	55	12	09	30	33	20
6. Program emphasis on teaching (as perceived by faculty) (F-4)	21	10	46	04	11	52	39	19
7. Percent of faculty with outside research grant (F-k-1)	13	48	60	-17	35	61	28	38
8. Average faculty days away from campus in the last year (F-10)	06	29	35	-36	09	15	-01	32
9. Faculty-rated adequacy of physical and financial resources (F-2-x)	40	-00	60	11	17	46	55	23
10. Faculty experience; years since doctoral training (F-14)	52	-47	59	37	-19	27	21	-17

[a] C = Chemistry (N = 24 programs)
H = History (N = 25 programs)
P = Psychology (N = 24 programs)

indicators of program quality in other areas. Interpreting these correlations, it is apparent that students who think that the teaching is very good and that the students and faculty are very capable (items 1 and 3) also think highly of the curriculum and degree requirements, and in general are satisfied with the training they are receiving. Student judgments about the program operation tend to have a low positive or negligible relationship with most of the other variables on the list--peer rating of the faculty, size, level of emphasis on teaching, percent of faculty with outside research grants, average faculty days away from campus. This suggests that these characteristics have little bearing on what students think of their programs, particularly in chemistry and history. Correlation of student judgments with the adequacy of the physical and financial resources and relative level of faculty professional experience (table item #9 and 10) suggest that these characteristics are positively related to student views about their programs in chemistry and psychology, but neutral or negatively related to student views in history.

Student ratings of assistantships, alumni satisfaction with their dissertation experiences, and faculty judgments about departmental practices for the evaluation of students present somewhat more complex relationships. The way they are correlated with a variety of program descriptors is reported in Table 9.3. In this table we see that student views about assistantships in chemistry and psychology are related to the academic excellence of the program, its size, and its emphasis on research; but, in history,

Table 9.3

Correlates of Views about Assistantships, Dissertations, and Departmental Evaluation Procedures

	Rating of Assistantship Experiences (Students)			Satisfaction with Dissertation Experiences (Alumni)			Adequacy of Evaluating Students (Faculty)		
	C	H	P[a]	C	H	P[a]	C	H	P[a]
1. Quality of teaching (Student scale #7)	36	40	66	12	43	10	19	-04	59
2. Environment for learning (Student scale #1)	05	55	22	42	06	34	28	-25	35
3. Faculty-rated scholarly excellence of the program (Faculty scale #1)	58	02	58	23	37	57	75	79	65
4. Reputational rating of quality of the graduate faculty (F-25)	51	-23	58	14	28	57	29	58	31
5. Size: FTE doctoral students (DP-5-2)	58	-08	47	15	08	28	32	29	13
6. Program emphasis on research (as perceived by faculty) (F-4)	54	-18	48	17	27	33	53	70	36
7. Average faculty journal publications in last three years (F-9)	43	-32	25	08	24	55	22	16	34
8. Faculty-rated adequacy of physical and financial resources (F-2-x)	44	11	11	03	27	05	65	61	59
9. Faculty experience: years since doctoral training (F-14)	13	09	29	--	--	--	00	37	04
0. Percent of doctoral students with financial assistance (DP-11)	-41	46	11	-02	16	-28	-14	-03	06

[a] See footnote, Table 9.2

Note: Descriptors were selected for their relevance to these particular student ratings; therefore some of them are different from the descriptors included in Table 9.2.

the picture is quite different. Views of history assistantships are positively related to characteristics of the environment and negatively related to research emphasis or reputation. Some of this difference may result from the combination of reactions to research and teaching assistantships in the same set of items (see page 3 of the student questionnaire in Appendix D). The departments of chemistry and psychology probably offer fair numbers of both types of assistantships, so that they are weighted fairly equally in the final department index. But in history, almost all of the assistantships are in teaching. Also, more students in history are preparing to become teachers. Therefore, the correlations could be interpreted to mean that views about teaching assistantships among students preparing for a career as a teacher are essentially unrelated to the publications record and reputation of the faculty but do reflect the climate and human relationships of the department, whereas the opposite is true for views about assistantships in the more research-oriented fields of chemistry and psychology. Again, we see that teaching and research reinforce one another in the laboratory sciences (chemistry and psychology) but not in the humanities (history).

Alumni satisfaction with dissertation experiences do not appear to be very closely related to any of the other program descriptors listed in Table 9.3, with the possible exception of overall ratings of academic excellence (items 3 and 4). These low correlations probably reflect the generally high ratings given by alumni to their dissertation experiences, and the small variation among programs on this score (see item #6 in Table 9.1). Also, the rating reliability is not as high for this scale as for the others, and the significance of the difference between programs is not quite so certain (see Appendix F). Probably the items in this scale would be more useful in feedback reports to individual programs than combined into a scale score for comparison across programs.

Views About Job Placement

Another area of program functioning that was endorsed as important by the graduate deans is job placement of new graduates. Doctoral faculty members take pride in placing their top graduates with prestigious departments at other universities, and in general helping graduates through the "old boy" network of personal acquaintances. The decline in academic jobs makes this system increasingly inadequate, however, and many departments are taking more formal steps to locate a broader variety of job opportunities. Also, more departments are encouraging students to consider nonacademic careers. Because the placement of new graduates is in flux, it is not a reliable indicator of program quality at the present time. It continues to be an area of interest, however, and responses to questions in this study concerning placement were tabulated for descriptive information about programs. A summary of some of these results is reported in this section.

Many students expressed concern about job placement in comments that were volunteered at the end of their questionnaires. They voiced particular sensitivity to the role of program and university prestige in relation to job placement; comments such as "the faculty here do not have the national reputations or contacts needed to help graduates find good jobs" or "my only regret is that it will be even harder to find a job when I graduate because the department is not well known" were common. The pervasiveness of concern about employment probably contributes to the willingness of students to put up with uncomfortable environments in exchange for program prestige, as observed in earlier discussions. Differential perception of placement helpfulness from the departments with different reputations is also reflected in the questionnaire responses that are reported in Table 9.4. An average of more than 40% of the faculty in high-prestige departments think the department helpfulness in job placement is "excellent" (item 1), but only an average of about 15% of the faculty in low-rated departments feel the same way. Apparently all departments make some effort in this direction, however, since about 40% of the faculty across all reputational levels say the department's helpfulness is "good."

Students are somewhat less sanguine about the placement help they will receive from the department or the faculty (items 2 and 3, in Table 9.4) even at top-prestige programs. Roughly two-thirds of the faculty in each discipline think that the departmental placement efforts are at least "good," but only half of the students have

Table 9.4

Views About Job Placement (Averages of Program Percentages)

		Percent Responding								
		Chemistry			History			Psychology		
		H	M	L*	H	M	L	H	M	L
1. Faculty: Departmental helpfulness in job placement	Excellent	35	12	14	45	31	18	43	28	11
	Good	45	48	41	37	40	40	35	44	40
2. Students: Department does a good job placing graduates	Agree strongly	18	8	6	15	6	16	28	11	5
	Agree/reservations	53	44	38	42	30	41	39	42	31
3. Students: Helpfulness of faculty in finding jobs after graduation	Excellent	18	10	11	17	6	17	27	10	12
	Good	43	36	31	33	26	36	36	37	22
4. Reports from department chairmen about job placement			All Chemistry			All History			All Psychology	
a. Dept. maintains placement files for graduates	Yes		50			70			62	
b. There is a departmental faculty committee to work on job placement of grads	Yes		9			74			24	
c. Dissertation chairmen actively help students locate appropriate positions	Always		36			61			38	
	Often		59			39			57	
d. Department encourages registration with university placement office	Always		59			96			5	
	Often		14			--			29	
e. Academic placement has become more difficult in the last three years	Yes		73			100			81	
f. Nonacademic placement has become more difficult in the last three years	Yes		68			48			19	

*See footnote, Table 5.2.

this impression. In general, perception of helpfulness declines with reputational rating, except that low-rated programs in history are perceived by students to be much more helpful than medium-rated programs.

Department chairmen also were asked to indicate departmental practices and experiences in relation to job placement. Their responses are reported in item 5 of Table 9.4. Since these tabulations reflect only one response per program, they have not been separated into reputational levels. The chairmen of history departments, particularly, reflect a high level of concern about job placement for their graduates. More than 70% of these departments maintain placement files in addition to encouraging registration with the university placement office, have a departmental committee concerned with job placement, and consider placement help to be one of the important functions of a dissertation chairman. Every history department in the study reported that placement of graduates in appropriate academic positions has become more difficult in the last two years. The departments of chemistry and psychology are not far behind. In addition, two-thirds of the chemistry chairmen reported that placement in appropriate nonacademic positions has also become more difficult in the past two years.

Obviously successful job placement of new graduates is one indication of an effective graduate program, though in a very tight job market short-run indicators for this dimension could be very misleading. Placements cannot be made in positions that do not exist;

the reputation of a program may play an especially important role in first job offers. For these and other reasons, probably some evaluation of the efforts that are being made to broaden options and prepare students for a greater variety of employment possibilities are as important as an actual tabulation of the kinds of jobs that graduates are accepting when this area of activity is investigated as part of a program evaluation.

Uses of Academic Program Measures

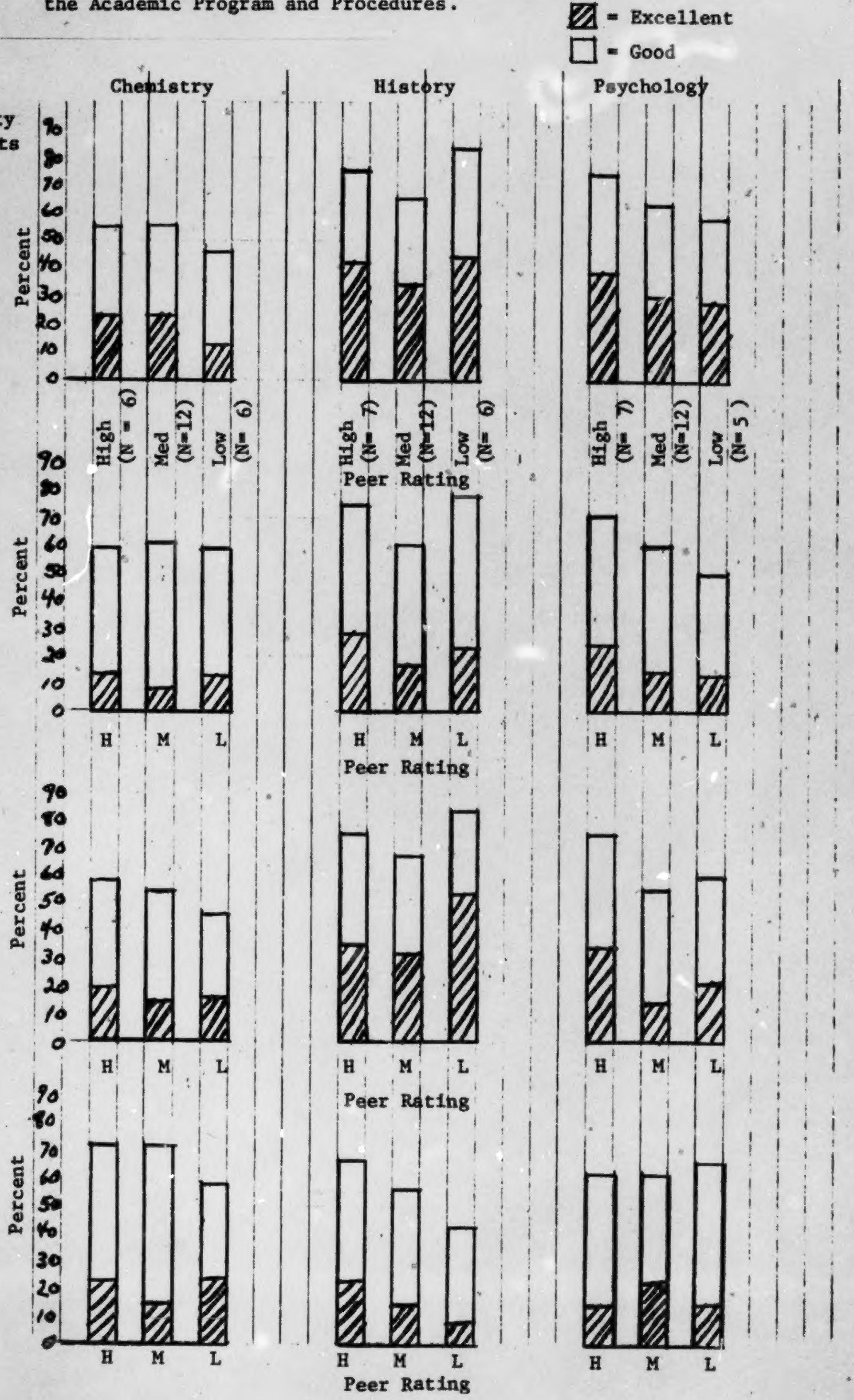
Most of the program measures reviewed in this chapter have been scale scores to represent characteristics of a program's academic offerings and procedures. The research results indicate that many of these scores are related to measures of other program characteristics, especially if the assessments are made by the same observers. The research has determined that reliable measures are available in this area, but we have not yet addressed the question of how they might be used.

Ratings of program functioning add the important dimension of process to the assessment of quality. At the level of individual program review, a great deal of information can be obtained about a program's structure and contents. Unfortunately, such anecdotal material does not lend itself to comparisons across programs in different disciplines. The "adequacy" measures described in this chapter suggest one way to circumvent this problem. They provide useful comparisons of judgments about program functioning, although questions of internal program equity will be viewed by many as rather tangential to questions of program quality. For this reason, the separate items in each scale (enumerated in Appendix F) may be more useful as feedback information to individual programs than as comparative program assessments, indicating particular strengths and weaknesses as they are perceived by students and faculty members. For example, opinions of program participants about the flexibility of the curriculum to meet individual needs, opportunity to take courses in other departments, clarity of degree requirements, and fairness of administering assistantships can be very useful information for a program that is looking for ways to increase its strength, without any need to reduce the data by forming scales.

Figure 9.1 graphically presents responses to four individual items from scales in this area with responses grouped according to high, medium, and low peer ratings of faculty quality within each discipline. The items selected for illustration are ones that correlate particularly highly with their scale scores. The figure demonstrates the kind of discipline or university-level comparative data that could be provided to help departments interpret their own responses without making any value judgments about desirable levels or distribution of responses for a particular program.

In terms of overall level in Figure 9.1, students in history programs give the highest percentage of "excellent" or "good" ratings to curricular flexibility, relevance of degree requirements, and opportunity for assistantship holders to act in a professional role. Chemists are least satisfied with these aspects of their

Figure 9.1. Selected Individual Item Responses Concerning the Academic Program and Procedures.



Student rating of the curriculum: Flexibility of program requirements to meet individual needs. (S-4-g)

Student rating of degree requirements:

Relevance of requirements to anticipated work in the field. (S-4-1)

Student rating of assistantship experiences:

Chance for (teaching or research) assistant to act in a professional role. (S-5-e)

Faculty rating of evaluation practices:

Department procedures for evaluating graduate student progress. (F-2-o) programs. On the other hand, history faculty are least satisfied with departmental procedures for evaluating graduate student progress.

In general, the bar graphs support our impression from other analyses that individual items, as well as scale scores concerned with program structure and procedures, are appropriate for use in a number of different disciplines and across all levels of program size and reputation. The similarity of responses to each of the items in all three disciplines suggests that it would not be necessary to collect separate comparative data for each discipline before using individual items to describe programs in this area. Also, the similarity of responses across reputational groups indicates that score differences between programs reflect different expectations and the respondent's perceptions of practices and procedures rather than halo or other reputational bias.

Chapter 10

ALUMNI ACCOMPLISHMENTS AND OPINIONS

Most of the data discussed so far in this report came from current program participants--advanced graduate students and faculty members who teach doctoral students--and from departmental records. These sources of information were in a position to "tell it like it is" in each department in the spring of 1975: No time lag for changing conditions to catch up with reputation, no unidentified halo effect, no second-hand guessing about what goes on behind the facade. These sources of information have been emphasized because they are readily available as well as appropriate for program assessment. There is one other source of information about programs that is highly regarded, if seldom surveyed, and that is their alumni.

Many department chairmen and other scholars of higher education will, when pressed to identify an ultimate criterion of program quality, state that accomplishment of the program's graduates is the best single measure of its success (cf., Willingham, 1974). The graduates are a tangible product of the program; they reflect the abilities and skills they already possessed at entrance, to be sure, but they also reflect the direct and indirect influences of their experiences as graduate students in a particular degree program. Chairmen and faculty members of programs, therefore, feel they have a legitimate right to claim some credit for the kinds of jobs their graduates hold, the scholarly works they produce, and the recognition they receive in their careers. And many believe that it would be appropriate to judge the quality of the program by these products.

In addition, it is often suggested that recent alumni will have more perspective about the contents, procedures, and requirements of a program than do currently enrolled students; more objectivity than faculty members; and more information on which to base judgments than do colleagues in the field who have never studied or worked in the department. Therefore, their views about their graduate programs are also valued as feedback for program improvement.

For both of these reasons, information about each program from a sample of recent alumni was considered an essential part of this study. We wanted to hear from alumni who had been in jobs long enough to have some record of accomplishment but also who had graduated recently enough to know something first-hand about the program. After discussion with experts in each discipline, it was decided to concentrate on graduates three to five years after the degree (those who received the doctorate in 1970, 1971, or 1972). Participating departments were asked to provide names and addresses of persons who received doctoral degrees in these years. Almost all of them did so. Questionnaires and one postcard follow-up were mailed to all of the continental United States addresses that were available. Many questionnaires were returned stamped undeliverable; it is known that others did not reach the right person, 2

despite the fact that they were not returned. Usable responses were received for 1,172 alumni, or 48% of those whose envelopes were not returned to us.[1]

This chapter gives particular attention to questions about the adequacy of this sample to represent alumni accomplishments and views about programs because the response rate was not as high as desired. However, it probably represents a realistic return, the kind that could be expected if departments were to survey their own graduates with a similar questionnaire. In fact, some of these questionnaires were sent out by the departments rather than by the researchers; their average rate of return was about the same. It is also likely that the reactions of some alumni are included in the study as faculty rather than alumni responses, because they are currently employed in the department that granted their highest degree.

Alumni Responses

Usable questionnaires from program alumni were examined to estimate response bias and to evaluate their generalizability before investigating their relationship to other measures of program characteristics. First, we looked at the number of alumni returns from each program in relation to the number of questionnaires sent out. Alumni responses were used only if there were at least 10 usable replies and they represented more than 25% of the total number mailed out, or if there were fewer than 10 usable replies but they represented more than half of all the questionnaires mailed out. The latter criterion was appropriate for a few programs that granted a small number of degrees between 1970 and 1972. Alumni returns met one of these criteria for 20 chemistry programs, 18 history programs, and 17 psychology programs. All further analyses and comments about alumni responses are limited to this slightly smaller set of programs.

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[1] Departments were asked to supply the names and addresses of all doctoral degree recipients in 1970, 1971, and 1972. A few programs could supply the information only for one or two of these years. Most did not have addresses for at least a few of the graduates in this time period. In the few cases where more than 100 degrees were awarded in this period, questionnaires were sent to a random sample of 100 degree recipients. Graduates of two programs in each field were not surveyed because fewer than 10 degrees were awarded in 1970-1972. Thus, technically the survey was not of all graduates of participating programs three to five years after receiving the degree, but it came close.

As mentioned earlier, the overall alumni response rate was about 48%. The average response rates for individual programs remaining in the analysis, grouped according to peer ratings of faculty quality, are presented on the first line of Table 10.1.[2] These are very conservative rates of return, since they could not be corrected for undeliverable mail. Response rates were slightly higher for lower-rated programs, but essentially quite similar across disciplines and reputations. A slightly higher response

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[2] The smaller number of programs with alumni responses available for analysis necessitated some regrouping of programs in the "medium' and "low" reputational levels used in this chapter. For alumni, "low" means a reputational rating below 2.4 rather than 2.0. This results in fewer programs in the "medium" category and a fairly even distribution of programs across the reputational levels: 6-8-6 in chemistry, 5-8-5 in history, and 6-6-5 in psychology. See Chapter 2 for a discussion of the rationale for grouping programs in this way.

Table 10.1

Alumni-Student Response Comparisons
(Average of Program Percentages)

		Chemistry			History			Psychology		
		H	M	L*	H	M	L*	H	M	L*
1. Average response rate		47	41	53	42	45	52	43	43	49
2. Sex: percent female										
	Alumni	10	9	11	14	10	15	32	28	22
	Students	11	14	19	29	30	13	39	34	30
3. Race: Caucasian										
	Alumni	93	92	89	93	94	94	94	99	95
	Students	83	79	75	82	90	85	90	89	93
4. Undergraduate grades: 3.5 or above										
	Alumni	41	21	21	39	30	35	45	28	24
	Students	48	24	26	48	32	15	59	47	30
5. Specializations:										
Organic chem.	Alumni	42	36	36						
	Students	31	32	60						
Physical chem.	Alumni	27	27	32						
	Students	36	29	16						
Modern hist.	Alumni				30	31	21			
	Students				34	34	26			
American hist.	Alumni				33	46	62			
	Students				31	39	51			
Experimental psy.	Alumni							26	23	12
	Students							21	25	16
Clinical psy.	Alumni							27	37	60
	Students							27	32	46

*Groupings for alumni data are as follows. See footnote, Table 5.2, for groupings for student data.

H = High peer rating of faculty quality (above 3.6), N=6 programs in chemistry and psychology, 5 in history.

M = Medium peer rating of faculty quality (3.6 to 2.4). N=8 programs in chemistry and history, 6 in psychology.

L = Low peer rating of faculty quality (below 2.4). N=6 programs in chemistry, 5 in history and psychology.

rate in the lower-rated programs was welcomed, since these also tended to be the smaller programs with fewer alumni available to represent each program. In terms of the actual number of responses used in the analyses, 5 respondents out of 9 alumni represent a program at one extreme and 68 respondents out of 100 alumni at the other. Most program mean scores represent the responses of between 10 and 35 alumni.

We do not know the characteristics of all 1970-1972 doctoral degree recipients of programs in this study, but questionnaires returned by most currently enrolled advanced graduate students provide a profile of these soon-to-be alumni. One check on the representativeness of alumni respondents, therefore, is to compare the characteristics of these two groups. We would not expect them to be identical, since the enrollment patterns of some of the programs may have changed over the past six or eight years, but we would expect alumni to be more like current students in the same program than like students in other programs. Table 10.1 also reports the results of this analysis.

Items 2, 3, and 4 in Table 10.1 compare alumni and enrolled student respondents on sex, race, and undergraduate grade-point average. Most of the alumni respondents entered these programs in the middle 1960s; most of the student respondents started their graduate studies in the early 1970s. Therefore, an average of about 7% more women and 8% fewer Caucasians in the current student population probably represents a reasonable shift in program enrollment patterns during this period. Also, very few foreign nationals were included in the alumni follow-up, which would tend to reduce the ethnic diversity. Slightly higher proportions of current students report undergraduate grade-point averages 3.5 or above, which is consistent with the trend toward undergraduate "grade inflation." In general, however, the percents are similar and consistent between alumni and students on all three variables at each level of program prestige and across all three disciplines.

Programs also vary in the specializations they offer, and the proportion of students who specialize in a given area. Therefore, the final comparison between alumni and student respondents is concerned with the percent who identify themselves with two popular specializations within each discipline. The percent of alumni respondents are compared with the percent of currently enrolled respondents in organic and physical chemistry, modern and American history, and experimental and clinical psychology. Though not identical, again the patterns are similar and consistent across groupings.

From this evaluation of the alumni response rates and a comparison of the respondents with advanced graduate student respondents from the same programs, we concluded that the alumni data were sufficiently representative to be useful as program descriptors and in analyses with other variables. They may fail to give a complete picture of the products of each of the 55 programs that provided usable alumni data, but they represent a unique resource in providing comparable information about a number of alumni from several doctoral programs in each of the three disciplines. The activities and opinions of these alumni are discussed in the remainder of this chapter.

Employment of Alumni

An earlier chapter discussed the purposes of doctoral programs in terms of the preparation of scholars or researchers, college teachers, or other professional practitioners, and concluded that the faculties of most programs perceive their mission to be the preparation of scholars and/or researchers. Therefore, one would expect most of the graduates of these programs to be employed in university positions or as researchers in other settings. Table 10.2 presents the average percent of alumni from programs at three different levels of prestige (peer ratings of faculty quality) who reported first position after the degree, current position, primary work activitiy in the present position, and two judgments about their present jobs. Conclusions that can be drawn from these data about the employment of recent alumni in three fields are that:

...about half of the new chemistry graduates of all programs had postdoctoral fellowships immediately after receiving the degree. Most of them appeared to have moved into research positions or into college or university teaching by 3 to 5 years later. An average of 60 to 70% of the graduates of all chemistry programs reported that they were currently engaged in research or research and teaching.

Table 10.2

Alumni Employment by Discipline and Peer Rating of Faculty Quality in Program Granting the Doctorate (Average of Program Percentages)

		Chemistry			History			Psychology		
		H	M	L*	H	M	L*	H	M	L*
1. First position after degree	a. Postdoc. fellowship	53	42	53	3	3	4	14	17	12
	b. 2-year college	3	2	7	3	2	6	1	--	1
	c. 4-year college	6	13	12	37	49	56	17	25	15
	d. PhD university	5	3	1	31	16	5	22	15	17
	e. Research	19	31	17	--	3	--	17	10	9
	f. Professional practice	--	--	--	--	--	--	13	17	22
2. Current position	a. Postdoc. fellowship	8	5	8	--	--	--	1	2	2
	b. 2-year college	1	4	7	5	2	7	1	2	--
	c. 4-year college	12	21	16	36	46	47	18	21	19
	d. PhD university	21	8	4	39	21	14	30	19	18
	e. Research	41	45	40	2	4	6	16	10	11
	f. Professional practice	1	1	3	--	--	--	14	19	24
3. Primary activity in present job	a. Research	45	49	46	3	4	10	20	13	9
	b. Research and teaching	24	12	12	39	25	8	31	25	22
	c. Teaching	13	25	23	48	52	71	21	20	19
	d. Administration	3	6	9	3	9	11	3	15	11
	e. Other professional	3	4	4	1	3	--	20	20	33
4. Present job "highly related" to graduate field of study		41	36	29	60	62	65	72	59	69
5. Considers self underemployed		12	15	23	23	22	18	15	18	9

*See footnote, Table 10.1.

Note: Percentages may not add to 100 because adjunct faculty positions and employment in administrative positions, elementary or secondary schools, or "other" are not tabulated. Fewer than 4% of the alumni from any program reported that currently they were not employed for pay.

10.9

...the largest percent of graduates from history programs took first jobs in four-year colleges, and the largest percent continue to be employed in this setting. Only top-prestige history programs placed as many as one-third of their graduates in Ph.D.-granting universities. More than half of the history graduates in all programs reported teaching as their current primary job activity.

...graduates of psychology departments spread out to a greater variety of positions than did graduates in the other two fields, both immediately after the degree and later. Roughly one-third were employed by colleges or universities and one-third in research positions or professional practice (type of employer was not related to program prestige). However, about half of the graduates of highly rated psychology programs reported research or research and teaching as the primary current job activity, while the percent in research was somewhat lower for lower-rated programs.

...fewer chemists than historians or psychologists reported that their present job was "highly related" to their graduate field of study.

...an average of about 10 to 25% of these respondents who received degrees from doctoral programs in 1970 to 1972 reported that they considered themselves underemployed because their present positions were not in their field or not consistent with their level of training and experience. The percentages are somewhat larger in low-rated chemistry departments and in high- or medium-rated history and psychology departments.

In summary, the only clear differentiation by prestige of the degree-granting programs that appears in Table 10.2 is the higher percent of graduates employed by Ph.D.-granting universities, and a correspondingly higher percent of graduates from these programs who report research or research and teaching as their primary current job activity. Though jobs are tight and graduates of even the most prestigious programs disperse much more broadly than they did a few years ago, it is still true that most permanent positions at major universities are filled by graduates of what are considered to be the top programs in the field. Alumni views about the relevance and appropriateness of their current employment are not related to any appreciable extent to the prestige of the program from which they received their degrees.

Expected differences in the employment patterns of graduates from each of the disciplines were found. Chemists were most likely to be employed as researchers, psychologists as college or university faculty or in other professional practice, and historians as college teachers.

Alumni also were asked to rate a number of statements concerning their employment setting, climate, and job satisfaction. These results are presented by discipline and peer rating of the graduate faculty in Table 10.3. The items reflect an assumption that most

Table 10.3

Alumni Description of Current Position (Average of Program Percentages Responding "Very Descriptive")

	Chemistry			History			Psychology		
	H	M	L*	H	M	L*	H	M	L*
1. It provides many opportunities for research and creative work (A-17-b)	48	38	34	29	25	18	41	34	35
2. It does not use all my education and skills (A-17-c)	13	17	19	19	22	16	14	23	19
3. It allows me to increase my visibility within the profession (A-17-f)	43	33	40	27	23	17	40	30	39
4. My colleagues are first-rate scholars or researchers (A-17-h)	32	26	26	11	13	21	26	15	19
5. It gives me a feeling of worthwhile accomplishment (A-17-m)	61	49	52	45	49	51	52	55	63
6. It is a very secure job (A-17-d)	27	28	27	28	29	42	27	30	42
7. It provides a very comfortable salary (A-17-a)	35	35	30	22	16	10	31	34	34
8. It gives me a chance to exercise leadership (A-17-j)	43	35	42	28	33	35	51	43	58

*See footnote, Table 10.1.

faculty members in the disciplines surveyed in this study would agree that a good job for one of their proteges would offer an opportunity for creative work and research, utilize the person's abilities, provide conditions for advancement in the profession, involve contact with other first-rate scholars, and result in a feeling of worthwhile accomplishment. The first five items in Table 10.4 give the average percent of respondents in each of the program groupings who said that each of these statements was "very descriptive" of their current work. The higher proportion of chemists and psychologists who are employed as researchers probably accounts for the somewhat higher level of their responses to the first question (concerning opportunity for research and creative work), and for some association between response on this question and the reputational grouping of the department. Responses to the other four questions are uniform across reputational levels.

The last three questions in Table 10.4 also reflect important job considerations for a young professional, but they are not necessarily related to the scholarly tradition: job security, salary, and opportunities for leadership. Responses to these questions also are uniform across reputational levels, with the possible exception of the salaries of historians.

Alumni Career Accomplishments

Since, as noted at the beginning of this chapter, career accomplishments of alumni have high acceptance as a criterion of doctoral program quality, alumni were asked to report their professional activities in a number of areas. They also evaluated the excellence of the career training they received as a part of their graduate studies, and made judgments about the overall excellence of their graduate programs. Responses of the alumni from each program were summarized, and the mean score or percent of alumni giving a particular response to each item was adopted as the program indicator on that variable.

Table 10.4 presents the major questionnaire items concerned with alumni accomplishments and program outcomes together with the means of departmental mean scores or percents, their standard deviations, and correlations among the variables. Discipline variations in employment patterns, reported earlier, are also apparent here; in addition, there are discipline differences in alumni satisfaction with their career preparation (#1), the percent who reported post degree research on their dissertation topic (#4), the percent who had published part of the dissertation (#5), the percent who had published a book (#8), average number of professional presentations (#9), and current annual income (#6). Earlier chapters in this report indicate that many input and process characteristics of doctoral programs operate quite similarly in rather diverse fields of study; these data from alumni suggest that the evaluation of program outcomes in terms of the activities and accomplishments of graduates need to be viewed separately by discipline or area of study.

Table 10.4

Intercorrelations of Alumni Career Accomplishments and Judgments

Item		Correlations											Mean or percent	S.D.
		1	2	3	4	5	6	7	8	9	10	11		
1. Percent reporting "Extremely good" career preparation (A-4-abc)	C[a]	--											64	.17
	H	--											69	.12
	P	--											83	.10
2. Percent with current academic appointment at Ph.D. university (A-15-b)	C	38	--										11	.10
	H	33	--										25	.16
	P	41	--										23	.14
3. Percent with research or research and teaching as primary work activity (A-18)	C	05	27	--									63	.16
	H	-10	72	--									30	.17
	P	68	71	--									41	.17
4. Percent who reported further research on dissertation topic (A-22)	C	-11	19	26	--								37	.10
	H	-10	21	-05	--								78	.17
	P	49	46	74	--								48	.16
5. Percent who had published part of dissertation (A-23)	C	16	16	14	10	--							82	.13
	H	06	30	11	67	--							59	.15
	P	60	61	74	78	--							45	.16
6. Average annual income in thousands (A-26)	C	-14	-30	20	-22	06	--						17.8	1.8
	H	-17	-04	-31	73	41	--						15.1	1.5
	P	-24	-18	-46	-42	-33	--						19.1	1.7
7. Average number of journal publications (A-27-a, b)	C	25	33	26	46	-11	-01	--					6.54	2.03
	H	-11	20	29	-02	-27	-21	--					6.37	4.12
	P	57	70	76	69	68	-17	--					5.44	2.10
8. Percent who had published a book (A-27-c, d)	C	-24	-07	26	48	-11	-01	43	--				03	.04
	H	-31	48	33	04	52	-23	-25	--				28	.13
	P	15	06	37	28	29	-08	24	--				11	.08
9. Average number of presentations at regional or national meetings (A-27-f)	C	08	-38	29	06	-13	40	35	34	--			2.42	1.01
	H	34	37	30	14	47	15	-28	19	--			1.90	.56
	P	-05	29	21	40	45	-15	24	38	--			3.34	1.14
10. Average number of presentations at scholarly colloquia (A-27-g)	C	08	24	49	60	-19	07	48	45	18	--		2.22	1.11
	H	-44	09	21	44	52	19	07	28	17	--		1.67	.82
	P	-40	15	08	08	11	-11	-01	40	41	--		2.03	1.05
11. Alumni Scale score #2: Scholarly excellence of program	C	76	22	-11	-09	24	-24	-14	-41	-14	-21	--	3.14[b]	.39
	H	30	55	41	26	05	-13	08	24	20	-09	--	3.26	.40
	P	-08	17	-06	-11	-14	-18	03	26	41	31	--	3.33	.30
12. Would advise friend to attend (A-1-f)	C	85	66	08	-08	31	-21	19	-35	-23	-08	--	3.17[b]	.37
	H	34	58	36	45	18	08	-02	25	31	02	--	3.15	.40
	P	42	41	42	27	29	-46	37	19	18	23	--	3.21	.32

[a] C = Chemistry (N = 20 programs)
H = History (N = 18 programs)
P = Psychology (N = 17 programs)

[b] 4 = excellent or agree strongly
3 = good or agree with reservations

The within-discipline correlations between the variables in Table 10.4 also present a mixed picture. Some interpretations:

...Judgments that a program prepared alumni "extremely well" for work as a scholarly researcher, college teacher, or other professional practitioner (#1) are essentially unrelated to any of the reported career accomplishments, with the possible exception of current employment at a Ph.D. university in all fields (#2) and research work and journal publications by psychologists (#3, 5, and 7).

...Being currently employed at a Ph.D. university (#2) is positively related to being engaged in research among historians and psychologists (#3) and positively related to publications and scholarly presentations in all three fields, though only very strongly for the publication of journal and dissertation articles by psychologists and the publication of books by historians (#4, 5, 7, 8, 9, and 10).

...Being engaged primarily in research or research and teaching (#3) is positively but not highly related to publications or scholarly presentations in any of the fields except perhaps the publication of journal articles by psychologists (#5, 7, 8, 9, and 10).

...Average annual income (#6) is unrelated or negatively related to almost every other variable in the table for all three fields.

> ...Most of the alumni accomplishments that are reported here are essentially unrelated to their own judgments about the scholarly excellence of the program or their advice to a friend about attendance (#11 and 12). The only exception is current employment at a Ph.D. university; apparently these graduates think their programs helped them obtain their current positions, and they would recommend the programs to friends with similar interests.

Correlates of Career Accomplishments

Measures of alumni accomplishment do not appear to be very highly related to one another. Are they more highly related to program characteristics such as reputation, faculty research activity, student views about the environment for learning, or overall satisfaction with the program by current students? Table 10.5 presents some of these correlations.

Again we see some congruence between the research preparation and involvement of alumni and the research emphasis of their graduate programs, as represented by correlations of items #2, 3, and 4 with peer rating of the faculty quality and level of faculty research activity. But there is very little relationship between any of the four program characteristics and the scholarly productivity of alumni, as reported by the number of journal publications or presentations at regional or national professional meetings (#6 and 7). The number of publications by alumni also are not highly related to the publication productivity of the department faculty

Table 10.5

Correlations of Alumni Career Accomplishments and Judgments with Characteristics of Programs That Granted Them Ph.D.s

Alumni Outcomes Variables	Reputational Rating: Quality of the Faculty			Faculty Research Activity (F. Scale #3)			Environment for Learning (S. Scale #1)			Overall Student Satisfaction (S. Scale #3)		
	C	H	P*	C	H	P*	C	H	P*	C	H	P*
1. "Extremely good" career preparation	58	-05	40	53	08	35	24	27	00	42	51	-06
2. Good preparation for career as scholarly researcher	69	64	46	51	60	43	16	-31	-35	52	49	-31
3. Current position at Ph.D. university	79	70	51	35	64	24	-07	-30	-03	37	34	45
4. Research or research and teaching as primary work activity	23	65	60	-25	67	52	-39	-24	-25	14	19	05
5. Average annual income	-21	16	-51	-23	-13	-50	07	06	19	-18	11	02
6. Average number of journal publications	37	-06	37	20	02	12	18	-33	-02	-24	01	02
7. Presentations at regional or national meetings	-26	38	09	-08	49	13	06	-24	-13	08	47	21
8. Alumni-rated scholarly excellence of the program	78	74	89	60	70	72	27	-28	03	54	49	32

*See footnote, Table 10.4.

(correlations of .46 in chemistry, -.17 in history, and .34 in psychology, not reported in the table). Both alumni research involvement and productivity are unrelated or only weakly related to the environment for learning and student overall satisfaction with the program. Average income is not related or negatively related to all four program indicators (#5). Only with the last variable, alumni-rated scholarly excellence of the program, is there a consistently high positive relationship with program reputation, faculty research activity, and student satisfaction.

The lack of any consistent pattern in these relationships suggests that the post degree activities and accomplishments of a program's recent graduates are influenced by many factors other than the graduate program itself, and that any effort to evaluate the quality of programs by evaluating the employment settings and professional accomplishments of graduates would need to be much more sophisticated than the approach taken in this study. As we saw in Table 10.4, even the graduates' judgments about the scholarly excellence of a program fail to predict activities that are generally considered to reflect scholarly achievement and recognition, such as a regular academic appointment at a Ph.D. university or scholarly articles published in professional journals.

In addition to information about alumni employment and professional activities, it could be helpful for departments to know more about the value of various graduate school experiences as preparation for different kinds of work. Table 10.6 lists several items of this

Table 10.6

Alumni-Rated Value of Graduate Experiences as Preparation for Present Work (Averages of Program Percentages)

Experience of "very great value" as preparation for present work.	Chemistry			History			Psychology		
	H	M	L*	H	M	L*	H	M	L*
1. Required courses in dept. (A-6-a)	19	24	28	28	31	13	34	32	17
2. Elective courses in dept. (A-6-b)	20	27	29	43	46	43	42	33	29
3. Association with your major professor (A-6-d)	63	61	67	63	68	62	56	63	63
4. Association with other professors (A-6-e)	22	25	26	45	34	32	43	36	23
5. Association with fellow graduate students (A-6-f)	48	36	29	36	34	37	50	46	39
6. The department's standards of excellence for work in the field (A-6-h)	60	34	24	64	53	36	68	60	42
7. Cultural and social life of the university (A-6-i)	28	16	11	32	23	13	31	19	15
8. Technical skills learned in course or research work (A-6-j)	57	52	68	44	34	36	63	59	56
9. Knowledge gained in course or research work (A-6-k)	58	50	59	60	63	54	67	56	49
Prepared "extremely well" for work in:									
10. Scholarly research (F-4-a)	74	48	37	71	53	45	76	69	59
11. College teaching (F-4-b)	25	31	25	16	35	45	22	22	26
12. Other professional practice (F-4-c)	10	7	9	4	3	0	20	24	37

*See footnote, Table 10.1.

sort that were included in the alumni questionnaire, and reports the percentages of alumni responses from programs grouped according to discipline and level of peer-raced faculty quality. These tabulations summarize responses by alumni in all kinds of positions; for local program review, it would probably be more helpful to sort responses according to type of work.

From the items in Table 10.6, it appears that association with a major professor (#3) and technical skills or knowledge gained in course or research work (#8 and 9) are perceived by alumni from all kinds of programs to be of greatest value or use in preparing them for their present work. Elective courses and association with other than the major professor (#2 and 4) apparently are more common, and more important, in history and psychology than in chemistry. Importance assigned to the department's standards of excellence for work in the field (#6) vary according to program reputational level, as do departmental and general university interpersonal experiences (#5 and 7). Reports of extremely good preparation for work in one of three major career paths (#10-12) closely parallel the differences in program emphasis that were reported in Chapter 4.

The results reported so far in this chapter are consistent with the notion that most doctoral degree recipients, almost regardless of the quality of the programs that grant their degrees, adapt to the demands and expectations of the employment situation. Three to five years after receiving the degree, they reflect the associations and expectations of their graduate programs only if the employment setting has encouraged such behavior. For example, a heavy teaching load will absorb most of the energy of a new faculty member, regardless of the emphasis placed on training for research and publication by his or her graduate program. A survey of employers might uncover some differences in job performance related to the program of training, but it seems more likely that much of this variation is removed by the self-sorting of career aspirants when they select a graduate training program to attend, and then by the jobs they seek. A relationship between characteristics of the program of graduate training and alumni career performance might be more apparent if alumni were carefully sorted according to their current employment settings and whether or not they had received specific training for the activities expected in that setting. However, getting a sufficient number of responses from any one group to reliably serve as a program-level indicator of performance would be a serious problem for many programs.

In many respects, the measures developed and used in this study produced more questions than answers; they are difficult to interpret since they do not appear to be related in any consistent way to the other program measures that were obtained from faculty members, current students, or department records. There are at least three possible explanations for these results. (1) The data are inadequate; they are not complete enough to give us an accurate picture of alumni accomplishments and opinions about the programs from which they received doctoral degrees, or they focus on alumni who have not yet had an opportunity to establish a consistent pattern of professional behavior. This is certainly a possibility, though it seems unlikely that data inadequacy is a sufficient explanation of the results. (2) Alumni of a program have a vested interest in making that program appear as strong as possible and, therefore, tend to view their experiences and training through rose-colored glasses. This would tend to obscure differences between programs in different reputational groupings. However, although there may be some strain toward reduction of dissonance in the alumni responses, there is no apparent reason why this should be any more true of alumni returns than of returns from current faculty members and students. (3) Alumni jobs and accomplishments are determined by many factors, only one of which is the particular program of graduate training. We have seen that probably the prestige of the program that grants the degree is helpful in obtaining a regular academic appointment at a Ph.D.-granting university, and that prestigious programs with very strong emphasis on training researchers do have more graduates who are employed in research work. But whether the person is employed in a job highly related to his or her field of graduate study, feels underemployed, publishes scholarly articles or books, presents papers at meetings or colloquia, or gets a feeling of worthwhile accomplishment from the work is largely independent of specific characteristics of the graduate program. This view suggests that the alumni data could be interpreted to mean that some, but not all, of the graduates of almost every program in the study are doing the kinds of things that would be considered to reflect excellence, and that career paths are determined less by specific graduate school experiences than by other factors (including the initial selection of a graduate program to attend). Alumni responses may also reflect less influence from the pervasive notion of a hierarchical arrangement among graduate programs than do responses from faculty members and students.

If these conclusions are accurate, the relevance of alumni measures to program evaluation needs further study. There may not be the automatic connection that usually is assumed. Such measures would need to be developed and interpreted with great care for they may challenge a number of traditional views about the characteristics of programs that are most important for educational excellence.

Alumni Opinions for Program Improvement

A second reason for surveying recent alumni as part of program review was to solicit their opinions about particular aspects of the program and the training they received. Some items from the student questionnaire were repeated in the questionnaire sent to alumni, including a number of the items that were combined to form the scale scores reported in earlier sections of this report and described in detail in Appendix F. These items were tabulated as part of the feedback reports and copies sent to participating programs. Several department chairmen expressed particular interest in the alumni comments about the program.

The alumni responses to items concerning departmental functioning were correlated with student responses on identical items to get some indication of their level of agreement. Not surprisingly, there was a generally high positive association--usually in the range of .5 to .7--but some considerably lower correlations as well. There was a very high level of agreement about the ability of the faculty and the overall excellence of the program in all three disciplines (.7 to .8). Agreement was firmly positive but more moderate on issues such as the exploitation of students, humaneness of the environment, or adequacy of the curriculum and academic procedures. There was least agreement on items that may well reflect different experiences and conditions, such as student support for one another or faculty concern for students.

Many alumni commented that they had little first-hand information about recent changes in the program and often added that they had been gone from the campus since the middle or late 1960s. Therefore, very real changes can have taken place, in addition to differences in the perceptions of the two groups. For this reason, it seems likely that the opinions of current students will be much more useful in assessing the program procedures, environment, and curriculum that exist at any given time, and that it will not be very profitable to solicit opinions about these same characteristics from alumni. One exception might arise if a department wanted to document the effect of program changes on the attitudes and opinions of participants, but this would call for a particular set of questions to get at the issues of interest to that department.

Alumni also were asked to report their experience with the helpfulness of several different procedures for finding a job when they completed their doctoral studies. A third to a half of the graduates in each of the disciplines and from programs at all prestige levels said that the assistance of individual professors and letters sent directly to prospective employers were "very helpful." The department's formal or informal placement effects were judged "very helpful" by 15% to 20% of the graduates of most programs. Openings listed with a professional association were more helpful to historians and psychologists than to chemists (10% to 15% vs. 7%); psychologists, particularly, rarely found the university placement office of much help (3% vs. 7% to 11% "very helpful"). It is interesting that the alumni responses did not demonstrate differences related to departmental peer ratings as did the judgments by current students and faculty that were reported in Table 9.4.

In this chapter we have shown that the alumni who responded to our questionnaires were quite similar in several ways to currently enrolled advanced graduate students in the same programs and, therefore, probably represented a reasonable cross-section of the 1970-1972 graduates of these programs even though the response rate was rather low. The alumni were in a variety of positions and reported a variety of accomplishments that one would expect to be related to the academic training they received: scholarly publications, presentations at professional meetings, and the like. However, except that there is some association between the research emphasis of a program and the employment of graduates in research work, alumni accomplishments seemed largely unrelated (or related in very complex ways that we do not yet understand) to program status in the other major areas of faculty training and productivity, student abilities, the environment, available resources, the curriculum, and reputation.

Feedback from alumni concerning their employment, other professional activities, and opinions about the graduate program in relation to the world of work are much more important than their reminiscences about their student days. We have discussed some problems with the interpretation of these kinds of data as comparative indicators of program outcomes. But this does not reduce the need for and appropriateness of such information as part of a department's self-study for program improvement and internal university review. Items such as those reported earlier in this chapter and in Chapter 9 would be equally appropriate for self-study purposes.

Chapter 11

SUMMARY AND DISCUSSION

This study grew out of a concern about the limitations of peer ratings of faculty quality--often referred to as "reputational ratings"--as the only widely acknowledged indicator of doctoral program quality. Because of a number of reservations about the meaning and utility of peer ratings, the Council of Graduate Schools in the United States joined Educational Testing Service in an effort to determine the feasibility of collecting more detailed information about the quality of doctoral programs, with the eventual prospect of broadening the criteria by which such programs are evaluated.

The study reported here used, as a starting point, information gathered in a national survey of graduate school deans conducted several years ago (Clark, 1973). That survey polled graduate deans regarding the criteria they thought were important in making judgments about doctoral program quality, as well as their impressions about the merits of various possible sources of information about these criteria. From a list of almost three hundred possible doctoral program characteristics, the thirty which received the highest endorsement as reasonable indicators of program quality are listed in Table 1.1 in the first chapter of this report.

In an effort to examine the feasibility of using many of these characteristics as indicators of quality in doctoral education, information was gathered, via questionnaires, from students, alumni, faculty, and chairmen in 24 doctoral programs of chemistry and psychology, and 25 programs in history. Two basic questions guided the collection and analyses of these data. (1) Could the various dimensions be measured reliably and within reasonable boundaries of cost and inconvenience? (2) If so, would the data provide useful information, information that would improve judgments that would otherwise be made about programs on the basis of their size, reputation, or other already available information?

Evidence relevant to these two questions is presented in the previous chapters, in which the many possible indicators of program quality are grouped into six categories having to do with the quality of (1) faculty, (3) students, (3) resources, (4) environment, (5) alumni, and (6) program academic offerings and procedures. The purpose of this chapter is to review some of the more important findings of the study with respect to these areas of doctoral quality, and to discuss the implications of these findings for future efforts to assess quality in doctoral programs. A very brief overview of findings with regard to the many possible indicators of quality is given in Table 11.1, and a slightly more detailed discussion of these indicators follows. Before turning to these areas of program quality, however, we shall consider the question of program purposes.

Table 11.1

Summary of Characteristics of Various Possible Indicators of Program Quality

Characteristic	Discussed in chapter	Comment
Faculty:		
1. Percentage of faculty with doctorate	5	Very little variation across programs; not sufficiently discriminating to be very useful as index of quality.
2. Percentage of faculty with doctorate from highly rated programs	5	Also not very discriminating across programs in chemistry and history. More variations (and therefore potentially more useful) in psychology.
3. Peer ratings of quality of faculty	4	Very homogeneous (high agreement among raters) and stable over time; highly correlated with research emphasis, size, publications, and the like; not correlated with indicators of the quality of the environment for learning. Requires collection of ratings data from faculty in other universities.
4. Student-rated quality of teaching	5	Data reasonably easy to get; highly correlated with several measures of the quality of the learning environment; not highly correlated with peer ratings.
5. Faculty-reported mean articles/book reviews in last three years	5	Wide variation across programs; fairly highly correlated with peer ratings; probably more useful index than mean lifetime publications; particularly appropriate measure in chemistry and psychology.
6. Faculty-reported books published	5	Not reported with sufficient frequency to be useful in chemistry and psychology, but a more useful indicator in history than articles published.
7. Publication citation index	5	Very highly correlated with publication counts; requires great deal of time and effort to gather necessary data.
8. Salaries	5	Neither conceptually nor empirically defensible as genuine indicator of quality.
9. Research activity index	5	Possibly the single best indicator of the research performance of a department's faculty.

(continued)

Table 11.1 (continued)

Characteristic	Discussed in chapter	Comment
Students:		
10. GRE scores (or, alternately, an index of selectivity)	6	Very difficult to obtain accurate data; seem to be fairly highly related to program research emphasis and peer ratings but data obtained in this study were too incomplete to permit confident conclusions.
11. Quality of undergraduate institutions	6	Difficult to get agreement regarding meaning of undergraduate institution quality; variable not examined in this study.
12. Student self-reported undergraduate grade average	6	Fairly highly correlated with graduate faculty appraisals of scholarly ability, commitment, and motivation.
13. Student commitment, motivation	6	Measured here by faculty ratings; highly correlated with ratings of scholarly ability and communication skills.
14. Quality of dissertations	6	Would require external panel of raters, perhaps also some information regarding norms for such ratings across many programs; variable was not included in this study.
15. Student attrition (or rate of ABD's)	6	Difficult information to collect; data reported by departments were frequently labelled as guesses; would seem to be important characteristic, but this study could not analyze in any detail.
Resources:		
16. Actual physical resource measures (e.g., books in library, lab facilities, etc.)	7	Very difficult information to gather, especially across large number of programs; not used in this study.
17. Faculty self-ratings of adequacy of facilities (library, labs, etc.)	7	Data easy to collect and are quite reliable; positively correlated with peer ratings and program emphasis on research in all three fields; also correlated with program instructional quality in chemistry and psychology.
18. Financial and other program description data	7	Extremely difficult to obtain reliable information across programs; many analyses intended with these data were not possible because of concerns about the accuracy of the information.
19. Overall institutional financial stability indicator	7	Not examined in this study.

(continued)

Table 11.1 (continued)

Characteristic	Discussed in chapter	Comment
Environment:		
20. Student reports about various aspects of program environment, such as faculty concern for students, competitiveness of students, etc.	8	Data easy to collect and are reliable; correlated with quality of teaching; not related to peer ratings and other traditional, research-oriented indicators of program quality.
21. Faculty reports about various aspects of environment, such as program leadership, relations with other faculty in dept., etc.	8	Data easy to collect and are reliable; relationship with other traditional indicators of program quality (e.g., peer ratings, program emphasis on research) varies by discipline.
Program Procedures		
22. One or more efficiency indexes, such as costs per student credit hour or cost per degree awarded	9	Accurate data across programs extremely difficult to collect. Not treated in this study.
23. Student ratings of various program contents and procedures, such as flexibility of requirements, assistantship experiences, etc.	9	These data can be obtained fairly easily and, as measured in this study, are quite reliable. They provide a useful "process" indicator that can be compared across programs.
24. Average time to degree	6	Not included in this study.

(continued)

Table 11.1 (continued)

Characteristic	Discussed in chapter	Comment
Alumni:		
25. Eventual, long-term, professional accomplishments (e.g., awards, professional society officerships, etc.)	10	Though eventual, long-term, criteria would be desirable, obtaining follow-up data from those who earned their degree more than a few years ago would be extremely difficult. Not attempted in this study.
26. Professional performance (e.g., publications, job related to training) of recent degree recipients	10	Performance information of more recent graduates is easier to obtain, but the short time lapse since the degree provides little opportunity for stable record of accomplishment.
27. Ratings by recent alumni of various program characteristics	10	Alumni ratings data are reliable; overall program quality ratings of alumni highly correlated with self-ratings of faculty and peer ratings.

The Role of Program Purposes

One of the major objectives of this study was to gauge the extent to which it might be possible to develop different indicators of quality for doctoral programs with different program purposes and emphases. One of the shortcomings of previous efforts to assess quality in graduate education seemed to be the failure to recognize that the criteria usually employed to measure quality--e.g., reputational ratings, publications of the faculty, and the like--were criteria that were of primary relevance to programs emphasizing the preparation of researchers and were less appropriate to use with programs designed to prepare teachers or other practitioners. It was for this reason that student and faculty respondents were asked to indicate the degree of importance they thought their department assigned to three different purposes: preparing scholars and/or researchers, preparing college teachers, and preparing other practitioners. The intention was to use responses to these items to sort departments into different groups according to program purpose, and the data from those that placed major emphasis on preparing teachers would be examined differently from the data concerning those that placed primary importance on preparing scholars and researchers.

It turns out that our logic was exceeded by our naivete. As already carefully documented in Chapter 3, which presents the data relevant to this question in considerable detail, we were not prepared for the consistently strong and pervasive influence of the research and scholarship model at the doctoral level, and the correspondingly slight emphasis given to preparing teachers and practitioners. Though the idea of fitting assessment indicators to the purposes of doctoral programs sounds reasonable in theory, in practice its impact is muted by the simple fact that the overwhelming majority of doctoral programs in the country appear to identify the preparation of researchers and/or scholars as their primary goal. This was certainly true for the graduate departments in our study, even though we intentionally included a number of programs in our sample that were not among the elite in their respective fields.

Thus, our discussion of indicators of quality will be seen to have been influenced strongly by the traditional research and scholarship model. We do not ignore other program purposes and, to be sure, a number of possible quality indicators are identified and discussed which would be appropriate for doctoral programs regardless of their primary emphasis. But, on balance, the indicators are ones which give recognition to the strong orientation of most doctoral programs toward the preparation of researchers and scholars.

Peer Ratings of Faculty Quality

Data presented in this report raise serious questions about using peer ratings of faculty quality as the sole criterion of doctoral program quality. Besides various shortcomings having to do with the rationale and utility of peer ratings (discussed in Chapter 2), the analyses reported here suggest that, as the single definer of program quality, they have shortcomings in an empirical sense as well. Though peer ratings are in general associated with numerous other traditional indicators of doctoral program quality--that is, when examined across a group of doctoral programs, peer ratings are definitely higher among those with higher publication rates, level of research activity, quality of resources, and the like--there are cases in which individual departments are a clear exception to this general tendency. The faculty in some doctoral programs have very high publication rates and research activity records, for example, but did not receive high peer ratings, regardless of the general tendency across a large number of programs. This might mean that those rating the programs were able to make the sometimes difficult distinction between publication quantity and publication quality. If so, the lack of correspondence between publication rates and peer ratings for an individual department may simply mean that publication rate is not an accurate measure of quality for the department in question. An alternative interpretation, however, is that it is the peer rating that is inaccurate since it is a measure which, in effect, has not kept up with the "real" activities and characteristics of the department.

There is no way to determine from the data reported here which of these two explanations is more reasonable. But such interpretive difficulties appear fairly often when examining peer ratings data for individual departments, and when there is such a discrepancy between peer ratings information and other departmental indices of quality, such a discrepancy should serve as a "flag" to warn the evaluator of the difficulties of making judgments about program quality on the basis of any single indicator.

A further limitation of peer ratings is that they are not related to several internal indicators of program quality, such as quality of teaching or quality of the environment. Favorable student opinions about these two characteristics are found just as often at departments with high peer ratings as they are at departments with low peer ratings. Thus, over a group of departments, peer ratings data are not at all revealing about these important departmental features.

These findings when combined with the logical shortcomings of peer ratings discussed in the first chapter, suggest that peer ratings are not sufficient as a single criterion of quality in doctoral programs. On the other hand, they clearly are appropriate as one of several indicators of faculty quality. They are generally stable over time, yet the ratings of some programs do change; they are reliable, in the sense that there is a high level of agreement among different raters of the same programs; and they are "valid" in the sense that they are correlated in expected ways with a variety of other program characteristics (see Chapter 4). Thus, as one indicator of the quality of a doctoral program's faculty--faculty quality, that is, in the research and scholarship sense--peer ratings are clearly appropriate and useful.

Other Indicators of the Quality of the Faculty

Three other indicators of faculty quality were identified as ones that are generally available and can be reliably assessed. These were the student-rated quality of teaching, the average number of published articles and book reviews per member of the faculty in the last three years, and the faculty research activity. (A detailed discussion of these variables and their characteristics is presented in Chapter 5.) The latter two characteristics tend to be positively correlated with each other and with peer ratings. That is, departments with a high record of publication productivity also tend to be departments with high reputational ratings and much research activity. Nevertheless, there are enough exceptions to that tendency to warrant assessment of each of these characteristics. Student-rated quality of teaching, on the other hand, appears to be unrelated to the department's research excellence, as defined by the other three indicators.

Assessment of a faculty's research productivity by paying particular attention to the quality of its publications as well as the quantity is an approach suggested by some observers. However, previous efforts to assess productivity by assigning weights to publications of different quality usually end up with essentially the same results as counts of their number (Jauch and Glueck, 1975). Furthermore, such procedures are difficult to carry out and have other problems that cannot be easily solved (e.g., the great diversity of opinion about which journals are the best ones in a given field). For these reasons a simple average of publications during a recent period is probably more realistic, at least when one's purpose is to identify an indicator of program quality that is useful across a group of departments or programs. It should be emphasized that when it comes to individual program or individual faculty member evaluation, however, careful attention to publication quality as well as quantity is absolutely essential.

Besides faculty research performance and teaching skills, two other characteristics often thought to be important to faculty quality have to do with faculty background, namely, highest degree earned, and quality ratings of the program from which the doctorate was earned. Though we obtained information regarding these background characteristics, neither proved to be very helpful in distinguishing among programs. There was practically no variation among departments with respect to highest degree earned, since virtually all graduate faculty in all three fields in this study have doctorates. The quality of the program from which the doctorate was earned (as measured by peer ratings of those programs) was somewhat more promising, since there was more variation among departments on this variable (especially in psychology), and it is somewhat related to other measures of program quality. Nevertheless, it serves mainly to document the fact that a very large proportion of doctoral program faculty earned their doctorates from high prestige programs.

Quality of Students

Two promising measures of student quality are the students' undergraduate grades and the faculty-rated commitment and motivation of these students. Both of these indicators are readily available, can be measured reliably and with minor inconvenience, and yield significant differences between departments.

A measure of quality of students that did not prove to be available from the records of a number of departments was Graduate Record Examinations scores. Though this would seem to be a "natural" and convenient indicator to use, the tests were not required by all departments and some others were unable to provide accurate average test scores for their entering students. Thus, until departments keep better records of the GRE scores submitted by students, this indicator of entering student quality cannot be expected to be broadly available for comparison between programs.

It is important to note that neither of these indicators (undergraduate grades or faculty-rated commitment and motivation) has to do with the quality of students leaving the doctoral program. Two strategies for measuring quality of students after completion of their doctoral training are available. One is to examine the eventual performance of the program's alumni; we attempted to obtain data of this kind and will discuss the results later. A second strategy would be to examine the quality of a program's graduates at the time they earn their degree, as, for example, through an evaluation of Ph.D. dissertations from the department. Unfortunately, this procedure would be expensive and time-consuming to establish on a regular basis, though it might be an integral part of a periodic program evaluation procedure that leans heavily on peer review. In any event, given the constraints of limiting our indicators to those which could be provided by students, faculty, alumni, or program administrators, such program review indicators were not included in our study.

Quality of Resources

The adequacy of a department's resources can be assessed by either measuring the resource in question (e.g., the books in the library, the laboratory space available) or by asking for people's opinions about the adequacy of the resources. Our analysis leads us to the conclusion that, since faculty ratings of resources are easier to collect (than actual book counts, for example), are reliable, and are related to both the research and educational functions of graduate departments, they would probably be better measures of the resource dimension. The ratings of the faculty almost certainly would be more useful and far easier to obtain than the expensive and time-consuming method of attempting to obtain specific, standardized measures of all relevant resources and facilities. (See Chapter 7.)

Quality of Environment

The quality of the "environment" is a dimension of graduate education that is seldom acknowledged. In this study student and faculty perceptions of their environment were measured by means of questionnaires. Students were asked about such aspects of the environment as faculty accessibility and treatment of students, the extent to which competition among students seemed to be encouraged, the quality of their relationships with other students. Faculty members were asked about their relationships with other members of the faculty, their opportunities to influence departmental decisions, and the like.

From these data, three useful measures of the department environment emerged: first, the nature of the learning environment (as reported by students), second, faculty concern for students (also as reported by students), and third, the nature of the work environment for faculty. Each of these measures seemed to provide provocative and useful information about student and faculty environments in all three disciplines.

The quality of the student environment, which seems to be primarily an index of the "humaneness" of the department, was not related to indicators such as peer ratings and publications in chemistry and psychology. In other words, humane environments were found approximately as often among prestigious departments as lesser known ones in these two fields. In history departments, on the other hand, favorable student environments were found less often in departments with high peer ratings and strong research orientations.

The quality of the faculty environment, however, was found to be associated with such traditional characteristics as peer ratings, program emphasis on research and scholarship, and the like, suggesting that what is important to the faculty is not always what is important to graduate students. (For further details regarding the nature of the environment indicators, see Chapter 8. For a discussion of the utility of environment measures, see the section entitled "Internal versus External Indicators of Quality" later in this chapter.)

Academic Offerings

Like the nature of the academic environment, opinions about the quality of specific components of the totality of the graduate experience are seldom sought. We asked students and alumni many questions about the various specific aspects of their graduate training, and four groups of items turned out to be ones worth recommending: (1) those dealing with overall student satisfaction with the doctoral program, (2) student ratings of the curriculum, (3) student ratings of their assistantship experiences, and (4) alumni ratings of their dissertation experiences. Each of these measures of the academic offerings of the program tend to be correlated with the student environment measures described earlier; that is, departments in which there is a high expression of student satisfaction with the assistantship experience also tend to be departments in which students report a favorable environment for learning, and so on. But the relationships between the ratings of the environment and the ratings of the academic offerings are still sufficiently distinct that their separate assessment is justified.

Alumni Performance

As mentioned earlier, an analysis of the performance of the alumni of a given department is frequently cited as one of the most sensible ways to attempt to measure the educational outcomes of a doctoral program. According to this argument, the most effective departments would be those whose alumni achieved the greatest distinction in their postdoctoral years.

In order to obtain feedback information from alumni who had been in jobs long enough to have some record of accomplishment but who also had graduated recently enough to have first-hand knowledge about the doctoral program from which they had graduated, information was sought from those who had earned their doctorates from three to five years ago (i.e., those who graduated between 1970 and 1972). One of the first problems was getting reliable data. Only 48% of the alumni we contacted returned usable data. Though the respondents do not differ in any consistent way from students currently enrolled in those same graduate programs, we naturally must be concerned about the extent to which the alumni data enable us to be confident about the experiences of all alumni in the sample. More important is the lesson in this for the future: It is clear that most efforts to obtain information from program alumni will also encounter the problem of response rates and the corresponding concerns about the generalizability of the information obtained.

With this caveat about response rates in mind, it would appear that four alumni behaviors are potentially useful as indicators of program quality: (1) alumni-rated quality of their career preparation, (2) the percent of the alumni who report that their current job is highly related to their graduate training, (3) the publication rates of alumni, and (4) the number of alumni presentations at regional or national meetings. None of these four indicators of alumni accomplishment are consistently correlated with other characteristics of graduate programs, especially those having to do with faculty training, productivity, and reputational rating.

It is worth noting that the first two alumni indicators are appropriate as indicators of doctoral program quality whatever the expressed purposes of the doctoral program might be. The third and fourth alumni indicators are obviously appropriate primarily for departments that place an emphasis on the preparation of scholars and researchers.

Examples of Multidimensional Profiles of Quality for Doctoral Programs

As should be apparent from the overview of the many possible indicators of doctoral program quality examined in this study, there are no hard and fast rules about which specific quality indicators should be used and which ignored. Instead, some indicators were found to be differentially appropriate depending on the discipline, the purposes of the evaluation, and so on. Nevertheless, to give the reader a feeling for the deeper understanding that can be obtained about a doctoral program by examining many program characteristics, profiles of 23 indicators have been put together for each of the three disciplines in this study and are presented in Figures 11.1, 11.2, and 11.3. For an explanation of some of the "mechanics" of the profile--e.g., how to interpret percentiles, how the score ranges for each dimension were calculated, etc.--see the large, enclosed box on page 11.20. Each figure presents profile information for two departments; each pair was purposely chosen so as to be of approximately equal standing on two or more major classification variables, such as size of the department or self-reported program emphasis on research. As the reader can see, the department average on each of the characteristics is plotted. Though such a procedure is useful for the purposes here--namely, the comparison of several different departments on a variety of different indicators of quality--we should like to emphasize that an evaluation of a particular department's standing on any of these characteristics should go beyond examination of the department average and pay careful attention to the range of "scores" within a department. For example, a departmental average of 10 publications per faculty member over a three year period may mean that most individuals in the department are publishing regularly or, conversely, that a few are publishing a great deal and still others are not publishing at all.

Interpreting the Profiles

The indicators of program quality are identical in Figure 11.1, 11.2, and 11.3. That is, the 23 program variables listed on the left side of each figure are the same for chemistry, history, and psychology. The values (numbers) in each profile differ, however, since these figures are based on data analyzed separately for the three disciplines.

For each of the 23 dimensions, the following information for the 24 or 25 departments in each field is presented:

...the highest department mean from among the 24 or 25 departments in the discipline;

...the department mean which is at the 75th percentile of all department means (that is, the point below which 75 percent of the other department means would fall);

...the department mean which is at the median or mid-point (and below which half of the departments in our study would fall);

...the department mean which is at the 25th percentile (the point below which 25% of the departments in that discipline in our study would fall; and

...the lowest department mean on the dimension.

It is important to emphasize that the numbers represent department means or arithmetic averages. Thus, the distribution characteristics (the percentiles, the median, etc.) are based, in most cases, on either 24 department means (in chemistry and psychology) or 25 department means (in history). Exceptions are those data obtained from alumni (entries 16-20 and 23), where low response rates made it necessary to exclude some departments. For these dimensions, the data in the profile are based on 17 departments in psychology, 18 in history, and 20 in chemistry.

The meaning that can be attached to the numbers on the profiles varies from one dimension to the next. Some are self-explanatory, such as dimension #2 (average number of publications) or #5 (students' undergraduate grade average) or #18 (percent of alumni with jobs related to their graduate training). Most of them, however, require the reader to refer to the questionnaire for absolute meanings, since the dimensions are often based on responses to one or more items from the questionnaire. The specific location of each dimension is given in parentheses after each dimension description. For example, dimension #1 was measured by student scale #7, dimension #2 by question 9-b in the faculty questionnaire, and so on.

Where the dimension is a "scale," that is, a score based on several items, the scores have been divided by the number of items in the scale so as to return the numbers to their original base. For example, the first dimension--student rated quality of teaching--is based on student responses to seven different items in the questionnaire. (See Appendix F for details.) But the values for this dimension on the profile have been adjusted so that they still correspond to the original response options. Thus, the highest department mean score on this dimension in chemistry--3.29--can be compared to the response options which ranged from 4.00 (for "excellent") to 1.0 (for "poor"), and the reader can see that the highest department mean of 3.29 on this dimension is somewhere between a student rating of "good" and "excellent." By referring to the questionnaire in this way, the reader can compare other dimension data to the original questions.

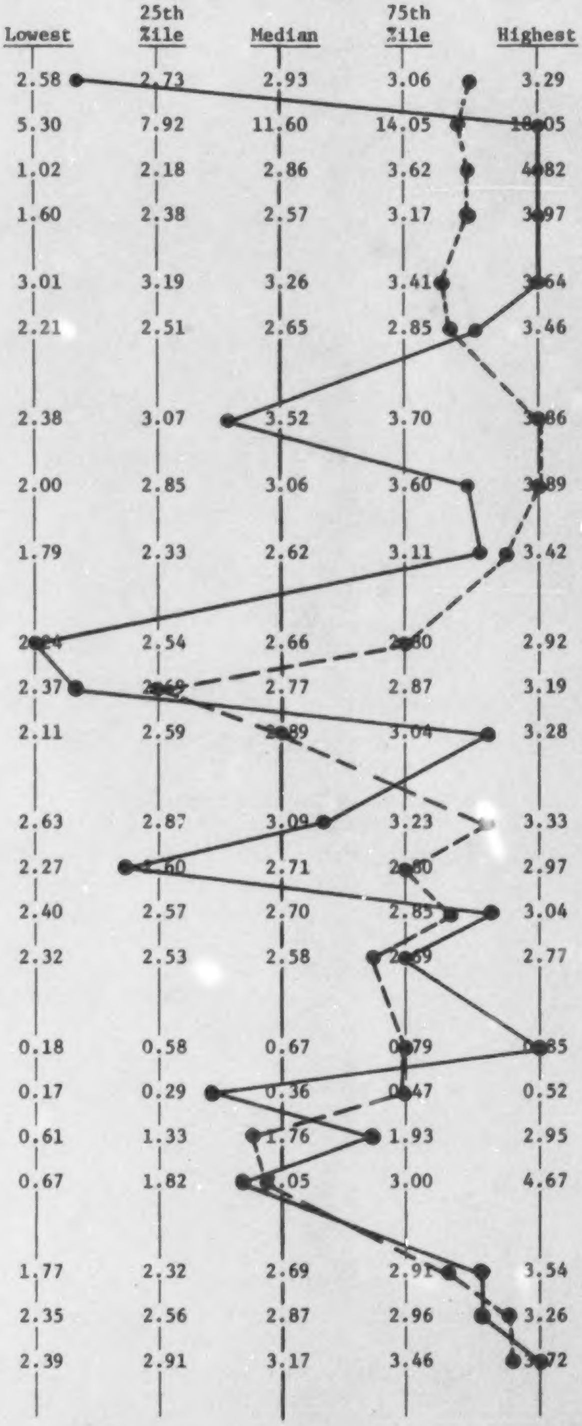
Figure 11.1 compares the performance of two large, elite, research-oriented chemistry departments. In terms of the quality of the faculties at these two institutions, both are ranked quite high (compared with the other 23 chemistry departments in the study) with respect to their record of research publication, research activity (e.g., journal editorships, research grants received, etc.), and their reputation among chemists at other departments. But there is a very substantial difference between these two departments in the student-rated quality of teaching at the doctoral level. Department "P" is rated near the bottom on this indicator, whereas Department "T" receives a rating near the top. The mean rating of all doctoral students in Department "P" is between "fair" and "good," the mean rating of all doctoral students in Department "T" is between "good" and "excellent."

Similarly, Department "P" receives lower marks than Department "T" on student-rated faculty concern for students (indicator #10), the student-rated environment for learning (indicator #11), overall student satisfaction with the program (indicator #13), and student ratings of the curriculum (indicator #14). In general, it is fair to say that doctoral students are less satisfied with Department "P" than Department "T."

The faculty ratings of Department "P" are more mixed. They are considerably less satisfied with library holdings and slightly less satisfied with the other physical and financial resources, yet they rate the compatibility of the work environment much higher than the faculty in Department "T," and their overall rating of the program's scholarly excellence (indicator #21) is about the same.

Figure 11.1. Dimensions of Quality Profile for Two Chemistry Departments

Note: In this example, the solid line represents department "P," the broken line represents department "T." Both departments are quite large (there are more than 200 FTE doctoral candidates in each department) and place "extreme" emphasis on preparing scholars/researchers.



	Lowest	25th %ile	Median	75th %ile	Highest
Faculty:					
1) Student-rated quality of teaching (S-scale #7)	2.58	2.73	2.93	3.06	3.29
2) Mean number of articles/book reviews in last three years (F-9-b)	5.30	7.92	11.60	14.05	18.05
3) Peer-rated quality of graduate faculty (F-25-a)	1.02	2.18	2.86	3.62	4.82
4) Research activity (F-scale #4)	1.60	2.38	2.57	3.17	3.97
Students:					
5) Undergraduate GPA (S-15)	3.01	3.19	3.26	3.41	3.64
6) Student commitment/motivation (F-scale #4)	2.21	2.51	2.65	2.85	3.46
Resources:					
7) Faculty ratings of library holdings relevant to their field (F-2-h)	2.38	3.07	3.52	3.70	3.86
8) Faculty ratings of laboratory or other equipment needed for teaching and research in your field (F-2-i)	2.00	2.85	3.06	3.60	3.89
9) Faculty ratings of overall adequacy of physical and financial resources for doctoral program in your field (F-2-x)	1.79	2.33	2.62	3.11	3.42
Environment:					
10) Student-rated faculty concern for students (S-scale #4)	2.24	2.54	2.66	2.80	2.92
11) Student-rated Environment for Learning (S-scale #1)	2.37	2.69	2.77	2.87	3.19
12) Compatibility of faculty work environment (F-scale #2)	2.11	2.59	2.89	3.04	3.28
Academic Offerings:					
13) Overall student satisfaction with program (S-scale #3)	2.63	2.87	3.09	3.23	3.33
14) Student rating of curriculum (S-scale #5)	2.27	2.60	2.71	2.80	2.97
15) Student rating of assistantship experience (S-scale #8)	2.40	2.57	2.70	2.85	3.04
16) Alumni rating of dissertation experiences (A-scale #1)	2.32	2.53	2.58	2.69	2.77
Alumni:					
17) Percent of alumni who declared program prepared them for career "extremely well" (A-4-a, b, c)	0.18	0.58	0.67	0.79	0.85
18) Percent with job highly related to graduate training (A-24)	0.17	0.29	0.36	0.47	0.52
19) Mean number of articles/book reviews (A-27)	0.61	1.33	1.76	1.93	2.95
20) Presentations at regional or national meetings (A-27-f)	0.67	1.82	2.05	3.00	4.67
Self-ratings of Overall Program Quality:					
21) Faculty self-ratings of overall program scholarly excellence (F-scale #1)	1.77	2.32	2.69	2.91	3.54
22) Student ratings of scholarly excellence of program (S-scale #2)	2.35	2.56	2.87	2.96	3.26
23) Alumni ratings of scholarly excellence of program (A-scale #5)	2.39	2.91	3.17	3.46	3.72

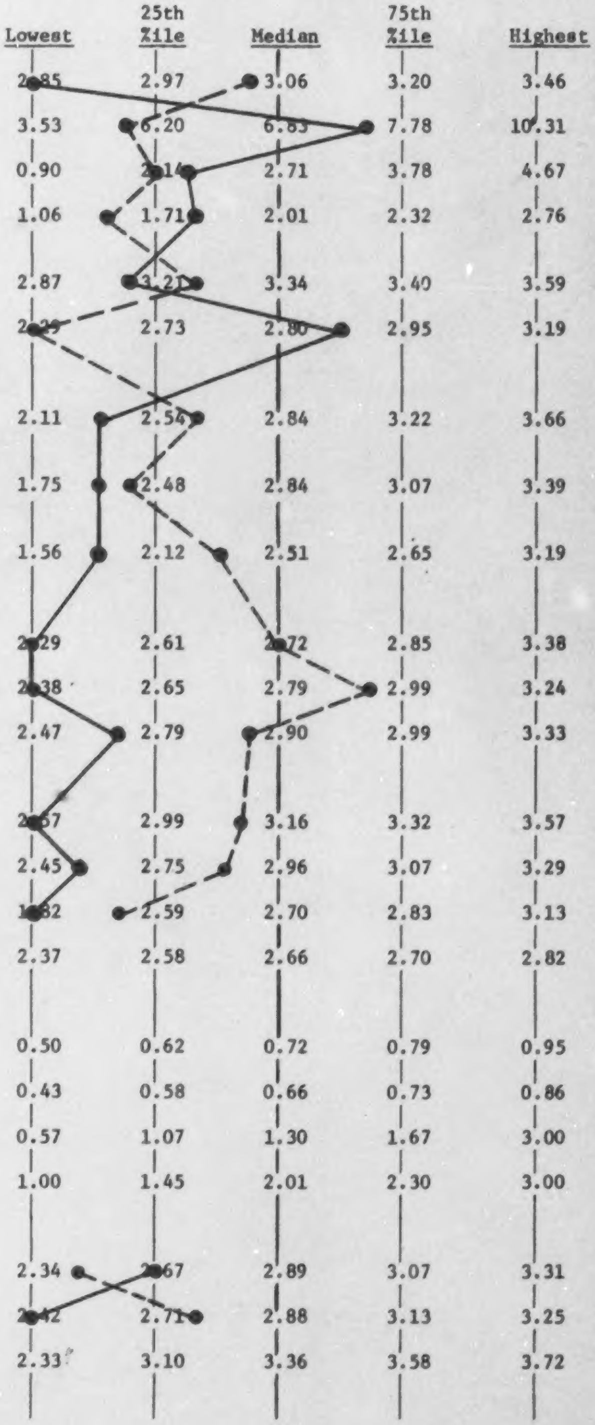
Figure 11.1 presents the data on these two prestigious departments which are very similar in external appearance (size, reputation), but in which there appear to be some interesting internal differences.

Figure 11.2 compares two smaller, considerably less-prestigious departments of history. As indicated in the note at the top of Figure 11.2, both of these departments have about 50 full-time doctoral students and place about the same emphasis on preparing researchers and scholars. Furthermore, they appear to be very similar with respect to their reputations (indicator #3), research activity (indicator #4) and graduate student input as measured by undergraduate grades (indicator #5).

At this point, however, the similarity between these two departments ends. Department "X" is more productive (indicator #2) and its faculty perceives their students as being more committed and motivated (indicator #6). But the "humaneness" of Department "X" is clearly not as favorable as that for Department "O" as evidenced by consistently low ratings by both students and faculty in these areas. Student ratings of the quality of instruction at Department "X" are the lowest of the 25 history departments in the study (indicator #1), and students' ratings of the faculty's concern for students, the department's environment for learning, their overall satisfaction with the program, the curriculum, and their assistantship experiences (indicators 10, 11, 13, 14, and 15, respectively) are similarly negative. In addition, faculty members in Department "X" give somewhat lower ratings to the physical and financial resources of the department (indicators 7-9), and considerably lower ratings to the compatibility of the faculty work environment (indicator #12).

Figure 11.2. Dimensions of Quality Profile for Two History Departments

Note: In this example, the solid line represents department "X," the broken line represents department "O." Both departments are of moderate size (approximately 50 FTE doctoral candidates in each department) and place "considerable" emphasis on preparing scholars/researchers.



	Lowest	25th %ile	Median	75th %ile	Highest
Faculty:					
1) Student-rated quality of teaching (S-scale #7)	2.85	2.97	3.06	3.20	3.46
2) Mean number of articles/book reviews in last three years (F-9-b)	3.53	6.20	6.83	7.78	10.31
3) Peer-rated quality of graduate faculty (F-25-a)	0.90	2.14	2.71	3.78	4.67
4) Research activity (F-scale #4)	1.06	1.71	2.01	2.32	2.76
Students:					
5) Undergraduate GPA (S-15)	2.87	3.21	3.34	3.40	3.59
6) Student commitment/motivation (F-scale #4)	2.29	2.73	2.80	2.95	3.19
Resources:					
7) Faculty ratings of library holdings relevant to their field (F-2-h)	2.11	2.54	2.84	3.22	3.66
8) Faculty ratings of laboratory or other equipment needed for teaching and research in your field (F-2-1)	1.75	2.48	2.84	3.07	3.39
9) Faculty ratings of overall adequacy of physical and financial resources for doctoral program in your field (F-2-x)	1.56	2.12	2.51	2.65	3.19
Environment:					
10) Student-rated faculty concern for students (S-scale #4)	2.29	2.61	2.72	2.85	3.38
11) Student-rated Environment for Learning (S-scale #1)	2.38	2.65	2.79	2.99	3.24
12) Compatibility of faculty work environment (F-scale #2)	2.47	2.79	2.90	2.99	3.33
Academic Offerings:					
13) Overall student satisfaction with program (S-scale #3)	2.57	2.99	3.16	3.32	3.57
14) Student rating of curriculum (S-scale #5)	2.45	2.75	2.96	3.07	3.29
15) Student rating of assistantship experience (S-scale #8)	1.82	2.59	2.70	2.83	3.13
16) Alumni rating of dissertation experiences (A-scale #1)	2.37	2.58	2.66	2.70	2.82
Alumni:					
17) Percent of alumni who declared program prepared them for career "extremely well" (A-4-a, b, c)	0.50	0.62	0.72	0.79	0.95
18) Percent with job highly related to graduate training (A-24)	0.43	0.58	0.66	0.73	0.86
19) Mean number of articles/book reviews (A-27)	0.57	1.07	1.30	1.67	3.00
20) Presentations at regional or national meetings (A-27-f)	1.00	1.45	2.01	2.30	3.00
Self-ratings of Overall Program Quality:					
21) Faculty self-ratings of overall program scholarly excellence (F-scale #1)	2.34	2.67	2.89	3.07	3.31
22) Student ratings of scholarly excellence of program (S-scale #2)	2.42	2.71	2.88	3.13	3.25
23) Alumni ratings of scholarly excellence of program (A-scale #5)	2.33	3.10	3.36	3.58	3.72

Clearly, Department "X" needs to give attention to what would appear to be some very serious internal shortcomings in the department. Though their doctoral students are motivated and their faculty productive (they score above the median for the 25 departments on both these indicators), both student and faculty satisfaction and morale is dangerously low.

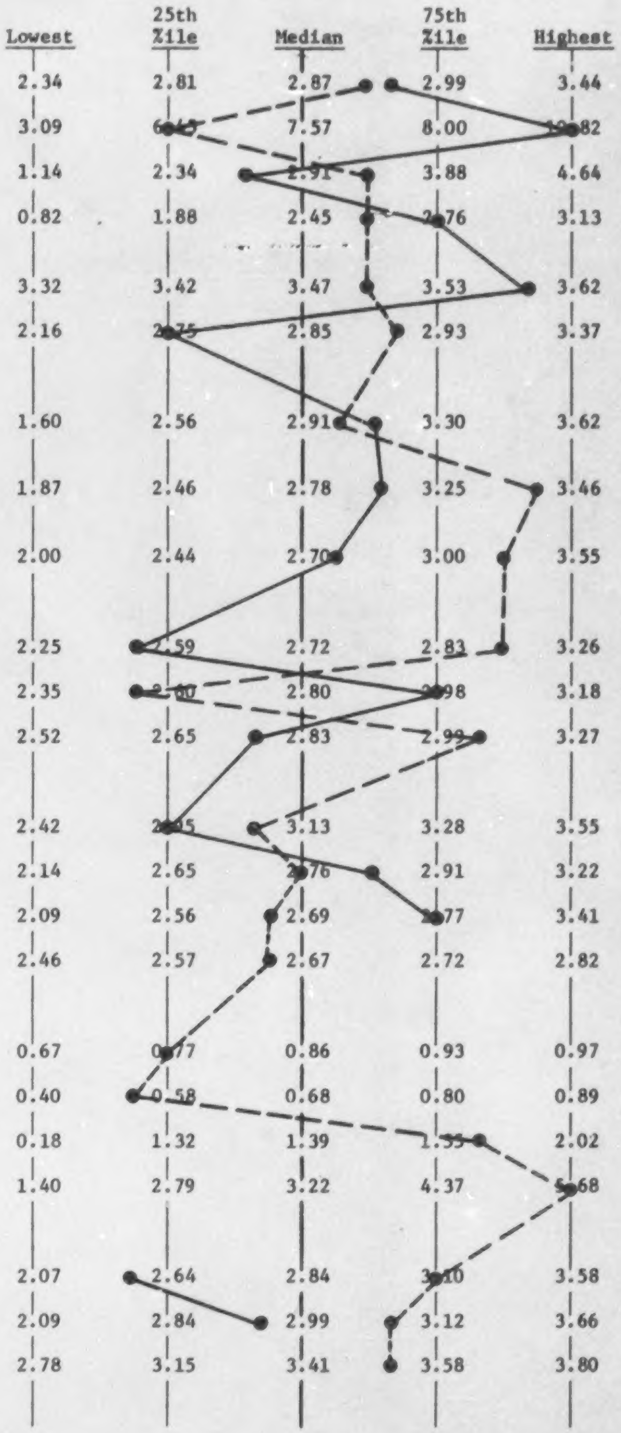
Figure 11.3 compares two psychology departments which are different in size but which give approximately the same emphasis to preparing scholars/researchers. This example serves as an excellent illustration of the fact that a department's reputation among peers does not always conform to current facts about departmental productivity or research activity. Department "I" has a somewhat lower reputation among its peers than Department "E" (indicator #3), in spite of the fact that its overall publication rate in the last three years is the highest of the 24 psychology departments in the study, and its research activity level is also higher than that of Department E. (For a discussion of an alternative interpretations of these data, see page 9 of this chapter.)

The faculty perceptions of the resources available in Department I are above the median--though lower than those for Department E--and faculty ratings of the compatibility of the work environment are slightly below the median, whereas those of Department E are above the 75th percentile.

Student attitudes about these two departments are mixed. Students in both departments rate the quality of teaching fairly high

Figure 11.3 Dimensions of Quality Profile for Two Psychology Departments

Note: In this example, the solid line represents department "I," the broken line represents department "E." These two departments differ in size (department "I" is a relatively small department, with fewer than 25 FTE doctoral candidates, whereas department E's enrollment is closer to 100), but both place between "considerable" and "extreme" emphasis on preparing scholars/researchers.



	Lowest	25th %ile	Median	75th %ile	Highest
Faculty:					
1) Student-rated quality of teaching (S-scale #7)	2.34	2.81	2.87	2.99	3.44
2) Mean number of articles/book reviews in last three years (F-9-b)	3.09	6.45	7.57	8.00	10.82
3) Peer-rated quality of graduate faculty (F-25-a)	1.14	2.34	2.91	3.88	4.64
4) Research activity (F-scale #4)	0.82	1.88	2.45	2.76	3.13
Students:					
5) Undergraduate GPA (S-15)	3.32	3.42	3.47	3.53	3.62
6) Student commitment/motivation (F-scale #4)	2.16	2.75	2.85	2.93	3.37
Resources:					
7) Faculty ratings of library holdings relevant to their field (F-2-h)	1.60	2.56	2.91	3.30	3.62
8) Faculty ratings of laboratory or other equipment needed for teaching and research in your field (F-2-i)	1.87	2.46	2.78	3.25	3.46
9) Faculty ratings of overall adequacy of physical and financial resources for doctoral program in your field (F-2-x)	2.00	2.44	2.70	3.00	3.55
Environment:					
10) Student-rated faculty concern for students (S-scale #4)	2.25	2.59	2.72	2.83	3.26
11) Student-rated Environment for Learning (S-scale #1)	2.35	2.60	2.80	2.98	3.18
12) Compatibility of faculty work environment (F-scale #2)	2.52	2.65	2.83	2.99	3.27
Academic Offerings:					
13) Overall student satisfaction with program (S-scale #3)	2.42	2.95	3.13	3.28	3.55
14) Student rating of curriculum (S-scale #5)	2.14	2.65	2.76	2.91	3.22
15) Student rating of assistantship experience (S-scale #8)	2.09	2.56	2.69	2.77	3.41
16) Alumni rating of dissertation experiences (A-scale #1)	2.46	2.57	2.67	2.72	2.82
Alumni:					
17) Percent of alumni who declared program prepared them for career "extremely well" (A-4-a, b, c)	0.67	0.77	0.86	0.93	0.97
18) Percent with job highly related to graduate training (A-24)	0.40	0.58	0.68	0.80	0.89
19) Mean number of articles/book reviews (A-27)	0.18	1.32	1.39	1.55	2.02
20) Presentations at regional or national meetings (A-27-f)	1.40	2.79	3.22	4.37	5.68
Self-ratings of Overall Program Quality:					
21) Faculty self-ratings of overall program scholarly excellence (F-scale #1)	2.07	2.64	2.84	3.10	3.58
22) Student ratings of scholarly excellence of program (S-scale #2)	2.09	2.84	2.99	3.12	3.66
23) Alumni ratings of scholarly excellence of program (A-scale #5)	2.78	3.15	3.41	3.58	3.80

(indicator #1). Students in Department I regard their faculty as low on concern for students but still give the department a fairly high rating on environment for learning, whereas students in Department E rate their department just the opposite--high on faculty concern for students, low on environment for learning. (For details on the relationship between these two quality indicators, see Chapter 8.) The different size of the two programs is possibly relevant to their students' ratings of the environment for learning.

A final interesting observation about these two departments has to do with their self-ratings of program quality. Both faculty and student ratings of the overall program scholarly excellence are lower at Department I than Department E, in spite of the fact that Department I's publication rate, involvement in research activity, and student's undergraduate records were superior. We already mentioned that the reputations of these two departments did not appear to jibe with the current facts about the departments. It also seems that the self-ratings of the faculty and students at both departments are somewhat inconsistent with some of the indicators of quality presented here.

Considerations Regarding the Use of Information About Program Quality

The focus of this study was on the feasibility of gathering more detailed information about doctoral program quality, and developing a thoughtful perspective on the meaning of the new information once gathered. As a result, much attention has been given to such issues as the availability of information, the reliability and accuracy of information, the interrelationships among different program descriptors, and the like.

What is not addressed in this report so far are questions about the utility of more detailed information about doctoral program quality. Will this information be useful? Is it likely to be more useful for some evaluation purposes than others? By certain groups more than others?

It was never our intention to explore carefully these kinds of questions in this study. First of all, it would have been somewhat premature to address questions about the utility of new information before the feasibility of collecting that information had been thoroughly examined. But more important, it is clear that considerations about the use of information regarding program quality are really more philosophical questions than empirical ones. As such, they are questions that rightfully need to be discussed and debated at length by members of the graduate community who are concerned with quality in doctoral education. We can and have said much that will hopefully be helpful regarding a variety of technical aspects of assessing doctoral program quality, but the questions of "what next?" are ones which need to be dealt with in another forum.

Nevertheless, there are some perspectives about the utility of information about doctoral program quality that do emerge from the findings of this study. They are presented here as a means of stimulating thought or perhaps generating new ideas about doctoral program evaluation.

Internal versus external indicators of quality. In the previous section in the discussion of the example departmental profiles, several references were made to findings that might be regarded as indicators of internal problems or difficulties in certain departments. As this suggests, a potentially useful distinction can be made between internal indicators of program quality and external indicators of program quality.

External characteristics refer to those features of a department or program that tend to be more public and that also might be thought of as being essential for a quality doctoral program. Such characteristics would, therefore, include a department's size, reputation, physical and financial resources, academic ability of the students, publication records of its faculty, and the like. It turns out that these characteristics are also among the more traditional indicators of quality at the doctoral level.

Internal characteristics, on the other hand, refer to those features of a department that are more private and less often considered when one thinks about program quality. These characteristics might include such indicators as student satisfactions and ratings of the teaching and environment for learning, faculty interpersonal relations, alumni ratings of their disseration experiences, and the like. On the example profiles presented in Figures 11.1, 11.2, and 11.3, the faculty, student, resource, and alumni indicators would generally be external indicators; the environment and academic offering indicators would tend to be internal ones.

As documented in the earlier chapters of this report, it is generally the case that the external indicators of program quality tend to be positively correlated with each other, and the internal indicators of program quality tend to be correlated with each other, but the external indicators, as a rule, are not correlated with the internal indicators. Knowing something about the public characteristics of a department (its reputation, for example) often permits a reasonably accurate guess about some other public characteristic (its size, its resources), ~~but~~ usually tells you nothing about its inner workings and more private qualities.

Different uses and users. The distinction between internal and external dimensions of quality is important to keep in mind, particularly as one considers the various uses that might be made of information about doctoral program quality. Such information can be used in various ways. It might be used primarily for within-program information, in which case it might be shared only with those inside the department or possibly within other areas of the institution but not with those external to the institution. Or another possibility would be to provide the information to relevant authorities outside the institution to assist them in making judgments about the quality of the program. These two different models--internal use for program improvement vs. external use in making judgments about program quality--often call for different information, for they obviously have different purposes.

Particularly, the information regarding internal indicators of department quality, as described above, may be more relevant for program improvement than for judgments made by agencies outside the university. This very sentiment, in fact, was expressed by many program faculty members and administrators with whom we spoke during the later stages of this project. They seldom doubted that information about such characteristics as the environment and program offerings was interesting and potentially useful, but they fairly uniformly saw it as data that should be shared outside the university only after careful consideration.

Still another possible use that might be made of information regarding the various indicators of quality would be to provide such information about departments to prospective graduate students, the logic being that such information would lead to an improved "fit" between students and departments. One mechanism for such an information flow would be to provide a guide to graduate programs, similar to the several that are already available, but with more detailed profile information about the departments such as that given in Figures 11.1, 11.2, and 11.3. In this study we did not give detailed attention to this possible use of indicators of program quality, but we did ask a number of people at the departments that participated in the study what they thought about this possible use of the departmental descriptors. There was a very mixed reaction to the idea. Some pointed out that some of the information--particularly the kind we have labelled "external" indicators of quality--was already available to prospective students in the various graduate school guides and occasionally from the departments themselves. More important was the reaction of some individuals that the "internal" indicators of department quality would be precisely the kind of information that would be made available by those departments who "looked good" on such indicators, but would be withheld by those departments whose profiles were less complimentary. As a result, they reasoned, student choices of departments would probably not be improved by such a practice. Others argued, however, that departmental cooperation would not be a serious problem. In any event, this possible use of program information is one that needs more thought and consideration at the graduate level.

We have attempted to summarize some of the different ways of thinking about the use of doctoral program indicators in Table 11.2, where two different categories or "families" of quality indicators (external and internal) are examined with respect to four possible uses that might be made of the information. Comments in this table should not be interpreted as recommendations, but, instead, as one way of organizing and beginning to think about questions concerning the use of program descriptors in doctoral program evaluations of various kinds.

Concluding Comment

This study began with the position that a more rational approach to the assessment of quality in doctoral education was necessary if

Table 11.2

A Model or Scheme for Thinking About the Relationship Between Two Different "Families" of Quality Indicators and Several Possible Kinds of Judgments or Evaluations About Doctoral Program Quality

	Evaluations or judgments made outside the university (e.g., state boards of higher education, foundations, professional associations, etc.).	Evaluations made within institutions, but outside the department or program (e.g., by trustees, officers of the university, graduate deans, etc.).	Evaluations or judgments made at the department level, primarily for purposes of program enlightenment and improvement.	Evaluation or judgments made about the program by prospective program applicants as a means of improving their choice of a program.
EXTERNAL (OR "PUBLIC") INDICATORS OF DOCTORAL PROGRAM QUALITY (e.g., faculty research activity, publications, peer ratings, quality of resources, quality of students, etc.)	Careful and judicious use in this context should be considered; would clearly be superior to sole reliance on criteria such as fiscal data, degree production, and the like.	Promising prospect. Optimal use would require good comparison data and informed perspective on differences between the disciplines.	Much of this information already used for departmental self-appraisals now. Difference in approach suggested here would be to place greater emphasis on comparison data from other doctoral programs.	Some of this kind of data already used for this purpose, but better, more standardized information would be an improvement.
INTERNAL (OR "PRIVATE") INDICATORS OF DOCTORAL PROGRAM QUALITY (e.g., quality of teaching, faculty concern for students, compatibility of faculty work environment, etc.)	Internal information of questionable use in this context. See discussion in text.	Probably useful, particularly to identify areas of strength and weakness and to stimulate program improvement. Good comparison data important.	Could be extremely useful to departments in gaining better understanding of their own environment. Seen primarily as aid to program improvement.	Research necessary to determine whether this information would in fact improve student choice. Also question about program willingness to cooperate.

fair judgments were to be made about specific doctoral programs and if program evaluation was ever to become a vital force in maintaining and strengthening quality in doctoral education in general. The study has focussed on technical or mechanical questions--can better information about doctoral program quality be obtained with reasonable cost and effort and, if so, what does it tell us? The basic message of the thousands of words and numbers reported here is that much better information can be obtained about program quality, and that it can be done without vast expenditures of time and money. It does, however, require a good deal of participant interest and cooperation. An important key to improved program evaluation is not only having more detailed information about a larger number of specific program characteristics, but also having information regarding the status of other doctoral programs on the same characteristics. In effect, the kind of multiple-indicator program evaluation model suggested here is not practicable if only one or two doctoral programs are interested. The potential benefits of such an effort are largely a function of the extent of widespread interest within a discipline. Thus, it would appear that the future of doctoral program evaluation does not depend on the level of interest shown by individual departments or programs in taking part in such efforts, but on the endorsement, encouragement, and direct actions taken by larger groups, associations, or organizations within graduate education.

This study has resulted in a variety of interesting findings; some were unexpected, many were not surprising, others were somewhat befuddling. On balance, however, the facts reported here provide an important first step toward improved doctoral program evaluation. The next steps are now up to the graduate community. Whether the next steps are taken and, if so, in what direction will determine the nature of doctoral program evaluation practices during the years ahead.

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APPENDICES

Appendix A

Communications with Participating Universities

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THE COUNCIL OF
GRADUATE SCHOOLS
IN THE UNITED STATES

One Dupont Circle, N.W., Washington, D. C. 20036 • Phone: Area Code 202: 223-3791

J. BOYD PAGE
President

March 6, 1975

Dean Robert M. Bock
Graduate School
University of Wisconsin
Madison, Wisconsin 53706

Dear Bob:

As you know from our newsletter and a report at the annual meeting, the Council is conducting a study concerning dimensions of quality in doctoral education under a grant from the National Science Foundation. I am now writing to ask for your support--and the support of several departments at your university--in carrying out this project. Details of the study and requests of cooperating institutions are summarized in the enclosed Fact Sheet. I think you will agree that the study is an important effort to broaden the meaning and measurement of program quality, well worth the time it will require from someone on your staff and the members of three academic departments. Let me tell you more about the help we need.

We would like for you to ask three graduate programs at your institution--chemistry, history, and psychology--to participate in the project. In each of these three departments we would then ask for questionnaire information to be provided by doctoral students, graduate faculty, and the department chairman. Basically, the questionnaires will ask the respondents to tell us about their department, including such features as student-faculty relations, the extent to which the program meets student needs, and the like. The student and faculty questionnaires will take about a half-hour to complete. The questionnaires would be completed anonymously, placed in envelopes which we shall provide, and returned to your office for forwarding to Educational Testing Service. None of the information will be identified with the specific department or your university in any report that we might issue. It will be regarded as strictly confidential.

The immediate product of this study will be a report to be issued to the National Science Foundation next fall, with copies also being sent to each cooperating institution and department. The long-range outcome, we hope, will be an increased understanding of the very complex nature of the meaning of quality in graduate education, and perhaps a more sophisticated awareness of how to go about assessing program quality. This may take the form of workshops, manuals, and the like, aimed at the use and interpretation of assessment materials for program improvement, policy dicisions, and expanded information to prospective students.

If you or one of your assistants could serve as coordinator for your institution, it would be an immense help to us. This person would be asked to make specific arrangements with department chairmen for questionnaire distribution, collect and return completed materials from the departments, make inquiries about forms that have not been returned, provide us with the names and addresses of recent graduates from these three departments, and, in general, serve as the liaison between the project staff and your institution. Though it may sound like a formidable task, we anticipate that the total time required for this activity would not exceed more than 1 or 2 hours per week for a period of about 5 weeks.

May I suggest the following series of steps as you consider this request:

(1) read the enclosed materials, particularly the project Fact Sheet, to determine how you personally feel about your institution's interest in cooperating;

(2) phone the chairmen of the three departments to explain the nature of our request, and then send the enclosed materials (memorandum to department chairman and Fact Sheet) to the chairmen;

(3) as soon as you have the department chairmen's replies, complete and return the enclosed form to us. We hope for cooperation from all three departments at each university in order to control to some extent for differences in institutional environments. However, if only one or two of your departments can participate, we would like this information and will let you know as soon as possible about the inclusion of your institution in the study;

(4) if you agree to cooperate in this important project, the questionnaires and further instructions will be sent to your coordinator sometime in late March or early April.

Since data collection must take place this spring and we are aware that the end of the academic year is rapidly approaching, I hope you can let us know your decision within a few days. Please telephone collect to me or Dr. Mary Jo Clark at Educational Testing Service (609) 921-9000, Ext. 2795 if you have questions or reservations.

Obviously, we think this project is extremely important. We hope that you agree, and that you will be able to solicit the cooperation of the chemistry, history, and psychology departments on your campus.

Sincerely,

J. Boyd Page
President

Enclosures: Fact Sheet
Memoranda to Chairmen, Departments of Chemistry, History, and Psychology
Reply Form and return envelope

THE COUNCIL OF
GRADUATE SCHOOLS
IN THE UNITED STATES

One Dupont Circle, N.W., Washington, D. C. 20036 • Phone: Area Code 202: 223-3791

J. BOYD PAGE
President

Memorandum to: CHAIRMAN OF THE CHEMISTRY DEPARTMENT

From: J. Boyd Page

Date: March 5, 1975

This memorandum is coming to you from the dean of your graduate school to invite your participation in a research project sponsored by The Council of Graduate Schools. We hope you will be as enthusiastic about its prospects as we are, and that you and the members of your department can provide the needed information.

Briefly, we are trying to identify and measure a variety of characteristics of doctoral programs that are related to the achievement of educational excellence. As part of this effort, we would like to obtain a profile of your doctoral program and opinions about the program from some of your faculty members, graduate students, and recent alumni. These data would be summarized for your department and analyzed along with summaries from about 20 other doctoral programs in chemistry and a like number of doctoral programs in history and psychology. Individual responses would be seen only by members of the research team and universities would not be identified in the final report. The major purpose of the project is to develop procedures which could be used to improve and expand the information available for doctoral program self-study and improvement, program review and evaluation, and the guidance of prospective students. The accompanying Fact Sheet describes the project in greater detail.

In addition to consultation with the American Chemical Society, the project's development and the design of data collection procedures have been guided by an advisory committee of chemists composed of Glenn Berchtold, Massachusetts Institute of Technology; Charles Lester, Emory University; William McEwen, University of Massachusetts; and Cheves Walling, University of Utah.

Time demands of the project include about a half-hour for faculty members and students to complete their respective questionnaires, arrangements in your office to distribute and collect questionnaires and follow up on non-respondents (respondents will put their names on the outside of sealed envelopes to assure confidentiality), and staff time to provide some basic descriptive information about your doctoral programs. Questionnaires will be available for distribution in late March or early April.

Please look over the accompanying Fact Sheet and then let your graduate dean know if your department will be able to participate in this important effort. We look forward to working with you.

FACT SHEET

Concerning a Study of Some Dimensions of Quality in Graduate Education

Purpose of the Study

The major purpose of this project is to gain a better understanding of the meaning of quality in graduate education and suggest some ways the assessment of quality might be improved. It goes beyond judgments of quality per se to identify information that would be meaningful from program to program and useful for program self-study and improvement, internal and external decision-making, and the guidance of prospective students. Doctoral programs in three disciplines will be studied on the assumption that dimensions of educational excellence vary somewhat from one area of knowledge to another. Several major program goals (for instance, preparing researchers, teachers, or practitioners) will also be considered.

Research Design

A recent national survey of graduate school deans identified a variety of program characteristics they felt were essential for judgments about educational quality and some acceptable ways to measure these characteristics.* The deans' judgments have been used to construct questionnaires to collect information about individual departments from faculty members, enrolled students, recent alumni, and departmental records. About 20 programs in each of the fields of chemistry, history, and psychology are being invited to cooperate in a field study of these assessment procedures. Data collection from cooperating programs will take place in March and April, 1975.

Data collected from these varied sources will be summarized by department and by field. Cooperating departments will receive profiles of their results, but all responses from individuals will be confidential and no department or university will be identified by name in reports of the study. The summarized data will also be analyzed for relationships between selected characteristics of doctoral programs and different sources of information, in order to specify more clearly the range of factors that should be considered when making judgments about quality. Data collection instruments will be revised, based on the study results, and made available for use by departments and universities undertaking self-studies or program reviews.

Sponsors

The study is jointly sponsored by the Council of Graduate Schools in the United States (CGS) and the Graduate Record Examinations (GRE) Board. It is funded by a grant of $155,000 from the National Science Foundation to the Council. The study is being conducted by Educational Testing Service under the general direction of a steering committee appointed by CGS and the GRE Board.* In addition, there is an advisory committee of scholars from each of the disciplines selected for field study.

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*A full report of this survey has been distributed to members of the Council of Graduate Schools; additional copies may be obtained by requesting GRE Board Research Report No. 72-7aR (The Assessment of Quality in Ph.D. Programs: A Preliminary Report on Judgments by Graduate Deans) from the Graduate Record Examinations Board, Educational Testing Service, Princeton, New Jersey 08540.

Universities Invited to Participate

About 20 universities that award doctorates in chemistry, history, and psychology are being invited to participate in this field study. We hope that all three departments in each university will agree to cooperate. Since universities were selected randomly from a stratified list of all eligible institutions, there are no preconceived notions about the profile that should emerge for any given department. The list includes universities broadly distributed geographically, some large and some small programs in each field, and some new or relatively unknown programs as well as some with top national reputations.

Data Collection

The key to this project is reliable information about each doctoral program from a variety of sources--faculty members, enrolled doctoral students, recent alumni, and departmental records. The following brief questionnaires will be used to collect most of this information.

Faculty Questionnaire: Distributed on campus to all department faculty members who teach doctoral students, this questionnaire asks professors to characterize their department by responding to a number of statements about people, programs, and policies and to report their current professional and research activities. Faculty members also are asked to rate appropriate programs in other universities. The form can be completed in about a half-hour.

Student Questionnaire: Distributed on campus to all experienced doctoral students (usually in their third year or beyond), this questionnaire provides an opportunity for enrolled students to characterize the department along some of the same dimensions provided for faculty and to evaluate the program in relation to their needs and interests. A few questions on student backgrounds and objectives also are included. The form can be completed in about a half-hour.

Alumni Questionnaire: Very similar to the student questionnaire but with additional items on employment and other post-degree experiences, this questionnaire will be mailed by the Council of Graduate Schools to a sample of those who received doctoral degrees from the department in 1970 to 1972. Campus coordinators will be asked to obtain appropriate names and addresses from departments or alumni offices.

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*The steering committee is composed of J. Boyd Page (President of the Council of Graduate Schools and Project Director), Philip E. Kubzansky (Boston University), Charles T. Lester (Emory University), Sterling McMurrin (University of Utah), Ralph E. Morrow (Washington University), Lincoln E. Moses (Stanford University), Michael J. Pelczar (University of Maryland), and Herbert Weisinger (State University of New York at Stony Brook).

Departmental Profile: Department chairmen or their representatives will be asked to provide some basic descriptive information about each department--number of students and faculty members, admissions data, financial assistance data, specializations, degrees granted, placement of graduates, and so forth.

Responsibilities of Cooperating Programs

The graduate dean at each university is asked to appoint one person to serve as local coordinator for the project. Appropriate data collection materials will be supplied to and returned by the coordinator; he or she will also be briefed as thoroughly as possible to handle questions or problems that may come up on any given campus.

The coordinator will make arrangements with the chairman of each department to inform students and faculty about the project, distribute questionnaires, collect completed questionnaires (in sealed envelopes in order to assure the confidentiality of responses), and follow up on non-respondents. Suggested guidelines for these activities will be supplied with the questionnaires. Departments will also be asked to complete the Departmental Profile form.

Benefits to Cooperating Programs

Each cooperating department will receive a summary report of questionnaire responses together with a summary profile of all cooperating departments in the same field. It is hoped that this information will be of interest to department members concerned with self-study or program evaluation; suggestions for improving the utility of the feedback will be invited. A member of the research team will visit most campuses some time during the project to talk with department members about the research and its findings. In addition, we hope it may be possible to set up some workshops on uses and interpretation of the data after completion of the current project.

Next Steps

Graduate deans are being asked to let us know as soon as possible whether or not the departments of chemistry, history, and psychology at his or her university will be able to cooperate in this effort to collect data on some quality-related characteristics of doctoral programs. We also need an estimate of the number of faculty members who teach doctoral students and the number of graduate students who are in their third year and beyond in each department, so that we can supply an appropriate number of questionnaires. Questionnaires must be distributed and returned this spring; therefore, it is important to have your response within a few days.

If you have questions or would like to discuss some aspect of the study, please write or call collect to Dr. Mary Jo Clark, Research Psychologist, Educational Testing Service, Princeton, New Jersey 08540. Telephone (609) 921-9000, Ext. 2795.

March 5, 1975

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08540

Area Code 609
921-9000
CABLE-EDUCTESTSVC

Developmental Research Division

Memorandum to Campus Coordinators

About: CGS Dimensions of Quality Project

Date: April 4, 1975

From: Project Researchers

Mary Jo Clark
Leonard Baird
Rodney Hartnett

We were very pleased to learn that your university would be participating in the Council of Graduate Schools pilot study of procedures to describe quality-related characteristics of doctoral programs and that you will be coordinating data collection on your campus.

As you will see from the enclosed materials, we have sent a brief memorandum to each cooperating department chairman on your campus, together with some guidelines for the distribution of the faculty and student questionnaires and sample copies of these questionnaires. We urge you to read these materials fairly closely so that you can answer questions and determine the best way to coordinate data collection on your campus.

Boxes of questionnaires are being sent to you by the ETS shipping department. They will send you a copy of the shipping order, which will indicate the way in which the materials were sent and their expected arrival date. A Xerox of your form, indicating the number of questionnaires you requested, is enclosed with this memorandum. Note that each department should receive about 25% more questionnaires than requested to cover spoilage and to use when following up with nonrespondents. Also note that each department should receive a supply of return envelopes that is equal to the number of questionnaires they receive. We can supply more questionnaires at any time if you find that you will need more.

Department chairmen should return completed questionnaires in their sealed envelopes to you, so that you can return them to us by REA Express Collect in their original shipping boxes. Materials for this will be included in the shipment to you. We would like to have the completed questionnaires returned to us by the end of May if at all possible.

As indicated in the Guidelines, there are several things we would like for you to do for us.

1. Deal with questions or problems concerning questionnaire distribution and return. Probably you can answer most questions without further information from us. But don't hesitate to phone collect, especially if a question comes up in more than one department. Our goal is to obtain a faculty and student view of each department that is as comprehensive and complete as possible; this is more important than whether part-time people are included or excluded, or the exact number of reminders that may be needed to get a questionnaire returned.

2. Encourage the departments to keep track of who receives questionnaires, the procedures they use to follow up on nonrespondents, and any particular problems encountered in data collection. We do not need names of respondents, but one of the purposes of the field study is to assess the feasibility of data collection. Therefore, we are very definitely interested in any general problems, resistances, suspicions, or roadblocks that are encountered in efforts to obtain information directly from faculty members and students.

3. We would like a university catalog and copies of brochures or other materials that describe the doctoral programs in chemistry, history, and psychology. The Guidelines ask department chairmen to send you copies of descriptive materials, for you to forward on to us; if these do not arrive within a few days, you might want to check with department offices about them.

4. We need a list of doctorates awarded by each department from 1970 to 1972. These lists will be used to conduct a mail survey of graduates who received their degrees three to five years ago. You may have such lists available in your office, or you may need to get them from the departments or from the alumni office. We plan to mail questionnaires directly to alumni in order to reduce the project's time demands on cooperating universities. However, if you or your department chairmen would prefer to contact the alumni directly, or if you must contact the alumni before releasing their names and addresses, we would be glad to provide you with an appropriate number of questionnaires and postage-paid return envelopes.

   Please let us know which procedure you prefer. If you plan to supply lists, we would like them as soon as they are available. We will send you sample copies of the alumni questionnaire as soon as they are printed.

5. Departmental profile forms will be sent to you for distribution to the department chairmen in about two weeks. Unlike the student and faculty questionnaires, these forms do not have to be completed before some of the students and faculty leave campus for the summer. However, we hope that department chairmen can complete them by the end of May or shortly thereafter. You may find that their task can be shortened somewhat by providing some of the information from records or reports in the graduate dean's office.

6. One additional group of potential program reporters, not previously mentioned in materials about the project but of considerable interest to us, is discontinued students. We recognize that dropouts are particularly hard to identify at the doctoral level and that it may be even more difficult to locate them. On the other hand, they may provide a view of a doctoral study program that is quite different from that of other participants, and therefore it may be worth some special effort to obtain their opinions. Therefore, we pose the following questions to you: Could you or your department chairmen provide us with the names and addresses of persons who "dropped out" of the Ph.D. programs in chemistry, history, and psychology over the last couple of years? About how many people would this be, by department? Do you have any evidence, pro or con, about (a) the feasibility of obtaining questionnaire returns from these people, and (b) the likelihood that their responses would differ from those of enrolled doctoral students?

Though this list of tasks may appear rather formidable, we anticipate that data collection on most campuses will go smoothly and that coordination will not require more than a few hours of your time. Needless to say, we appreciate your help and interest in the project. We stand ready to help in any way we can, including a campus visit if this would be useful. Again, don't hesitate to phone collect with any questions or problems. We look forward to working with you.

Enclosures:

Xerox of institutional information
Memorandum to department chairmen
Guidelines for on-campus data collection
Faculty questionnaire
Student questionnaire

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Developmental Research Division

Memorandum to Chairmen,
Departments of Chemistry,
History, and Psychology

About: CGS Dimensions of Quality Project
Date: Date: April 4, 1975
From: Project Researchers

Mary Jo Clark
Leonard Baird
Rodney Hartnett

We are very pleased that your department will be participating in this Council of Graduate Schools field study of doctoral program characteristics associated with educational excellence. Though most of our contacts in the next few weeks will be with your campus coordinator, we want you to know that we appreciate your efforts on behalf of the study. Please feel free to get in touch with one of us if you have questions that cannot be answered by your coordinator.

Three items for your information are enclosed with this memorandum:

1. Guidelines for on-campus data collection, specifying the faculty members and students who should receive questionnaires and outlining some suggested procedures for distributing and collecting the questionnaires. Some other requests for information from department chairmen are also reviewed in the Guidelines;

2. a sample copy of the faculty questionnaire (green);

3. a sample copy of the student questionnaire (blue).

Supplies of the two questionnaires are being sent to your coordinator, who will distribute them to each department. In the next few days you may want to establish procedures and prepare a cover memorandum so that the questionnaires can be distributed as soon as possible after they arrive. However, as you will see in the Guidelines, the time of distribution is up to you, subject only to our need to have the questionnaires returned to us by the end of May.

The Guidelines contain some other requests and comments that you will want to review. If you still have questions, please contact your coordinator or one of us. We hope the data collection goes smoothly and that you have an exceptionally high rate of returned questionnaires!

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Developmental Research Division

Memorandum to: CAMPUS COORDINATORS
DEPARTMENT CHAIRMEN

About: Guidelines for On-Campus Data Collection -- Project on Dimensions of Quality in Doctoral Education

Date: April 4, 1975

From: Mary Jo Clark
Research Director

In these quidelines we suggest some procedures that might be used on a campus or in a department to collect the information that is needed for this study. Not all of the suggestions will be appropriate for every situation; but we hope they will clearly convey our data collection objectives so that you can devise appropriate alternate procedures when these do not fit.

Requests of Department Chairmen

A good return of completed questionnaires is extremely important for the research goals of the study and for the usefulness of response summaries that will be returned to you. We expect that the best response rates will occur when a department chairman supports the study, informs his or her faculty and doctoral students about it, and encourages their participation. Therefore, we urge you to take whatever steps will convey your support and encouragement when the questionnaires are distributed. Some possible mechanisms might be a cover memorandum accompanying each questionnaire, a brief statement about the study at a meeting of faculty members and/or students, and a reminder at a department colloquium or other gathering that may occur shortly after the questionnaires are distributed. You might want to point out how the study, or feedback to the department, could contribute to department development or program reviews within the university. If there are concerns about confidentiality of responses, you might want to reiterate that all questionnaires will be returned to the researchers in sealed envelopes and that no individual responses will be read on campus.

The next most important influence on response rates will be the procedures adopted for questionnaire distribution and return. Probably each department has a list of faculty members and a list of graduate students which can be used to form a master list of the persons who should receive questionnaires. Distribution might be by campus mail or some other local system that gets the right piece of paper to the right person with reasonable efficiency.

(U.S. mail can be used, of course, but the project has no funds to cover this cost.) Some central location should be designated for questionnaire return (such as the department chairman's office or a box in a student or faculty lounge), and someone will need to check off returned questionnaires on the distribution lists. We hope you will send at least one reminder to those who have not returned questionnaires about two weeks after they are distributed. More about this below.

Timing

The completed faculty and student questionnaires should be returned to us by the end of May. Within this constraint, you may establish whatever distribution and return schedule seems best for you. Campus coordinators and department chairmen may want to decide on a common schedule, or departments may operate independently. Completed questionnaires in sealed envelopes should be returned to your campus coordinator, who will return them to ETS in bulk shipments. Please let your campus coordinator know as soon as possible if it appears that you may need to go beyond the end of May in order to obtain a good rate of response from either students or faculty.

Faculty Questionnaires (green)

One faculty questionnaire and one return envelope should be distributed to each faculty member in your department who teaches doctoral students. You will want to specify a place and deadline for their return in your cover memorandum. Our goal is to obtain a faculty profile about the doctoral program that is as complete as possible. Therefore, faculty in each sub-specialization should be included. Faculty members with joint appointments, part-time appointments, and adjunct appointments should be included if they are reasonably well acquainted with the department's operation and program and they contribute substantially to your doctoral training efforts. They may be omitted if you feel that their involvement with the department is relatively minimal.

Student Questionnaires (blue)

One doctoral student questionnaire and one return envelope should be distributed to each established doctoral student in your department. Usually these students will be in their third year or beyond of graduate study, although some second-year students might be appropriate in some departments. In general, the questionnaire should not be distributed to first year students or to students working toward terminal master's degrees; beyond this, we will accept your determination of those who can give the most complete and accurate responses to questions about the character and quality of your doctoral programs. Please include students in all of the sub-specializations within the department, and include part-time as well as full-time students if there is an appreciable part-time enrollment. Try to include some students who are writing dissertations and some who have not yet reached this stage. If appropriate and available, include students who are employed full time while they complete their dissertations.

Enlisting the help of some of the leaders in your graduate student group may be a useful way to encourage a high rate of student response. A cover memorandum encouraging participation and giving instructions about returning the questionnaire might be from the department chairman, a student leader, or both. A student departmental assistant might be asked to monitor questionnaire returns and organize a follow up to nonrespondents, or in other ways to encourage participation in the project by other students.

Follow Up

We hope you will be able to follow up on both faculty and student nonrespondents at least once, beginning about two weeks after the questionnaires are distributed. This might be done by memorandum, inquiries to group heads, phone calls, reminders in seminars or classes, or other procedures. You may want to send a second copy of the questionnaire to those who do not reply by a given date; extra copies have been sent to you for this purpose.

Confidentiality

Note that an envelope has been provided for each questionnaire. Completed questionnaires should be sealed in these envelopes before they are returned to you, and the sealed envelopes returned by you via your coordinator to us. Respondents are asked to place their names on the outside of the envelopes only so that you can identify those who need to be reminded to complete and return their forms; no name is requested on the questionnaire. After data collection is completed, we would like to know the number of faculty members and students to whom questionnaires were actually distributed, the follow-up procedures that were used, the number of questionnaires returned, and any bias in the returns that is apparent to you (e.g., most members of a particular sub-specialization declined to participate or a poor response from part-time people). We will not request a list of persons who did and did not complete a questionnaire.

Departmental Profile

The form that will be used to collect some basic information about each department will be distributed to campus coordinators in about two weeks. Most of the information requested on the form should already be available in the department or dean's office; guidelines will be provided to simplify completion of the form as much as possible. In the meantime, it would be helpful if each department chairman would send the coordinator one copy of any brochure, report, or piece of recruiting literature that describes doctoral programs in the department, outlines degree requirements, reports on jobs of graduates, or in some other way conveys information about the department that would be relevant to this study.

Alumni Questionnaire

The campus coordinator has also been asked to compile a list of persons who received doctoral degrees from your department from 1970 to 1972. These lists will be used to conduct a mail survey of doctoral program graduates three to five years after receiving their degrees. In some cases, departments may prefer to mail questionnaires themselves, with a request for participation that is more personal than a form letter from the Council of Graduate Schools. If you would like to contact your alumni directly, please let your coordinator know the number of questionnaires you will need and we will be glad to supply them.

If You Have Questions

The campus coordinator for the project will be able to answer many of the questions that are likely to come up in relation to data collection in individual departments. However, if you have a problem that cannot be answered locally, or if you would like to talk with one of the researchers directly, please telephone collect to Mary Jo Clark or Leonard Baird, Educational Testing Service, Princeton, New Jersey (609) 921-9000, ext. 2795 or 2792.

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Developmental Research Division

To: Campus Coordinators, CGS Project on Dimensions of Quality in Doctoral Education

Date: May 15, 1975

From: Mary Jo Clark
Research Director

Subject: 1. Departmental Profile
2. Other matters

Enclosed are four copies of the Departmental Profile form and an accompanying memorandum for department chairmen in chemistry, history, and psychology. One copy is for your information; please distribute the others to your cooperating department chairmen with a request that the form be returned to you as soon as it is completed.

As you know, we had hoped to get these materials to you a good bit earlier in the spring, but various problems conspired to hold them up. An unplanned benefit may be that departmental staff will now have more time to compile the requested data after the pressures of spring commencement have abated. Obviously, however, we no longer expect to have the completed forms returned to us by the end of May. In the memorandum to the chairmen, I have suggested that they complete the form by the middle of June if at all possible.

It would be helpful if you could look over the form before sending copies to the chairmen to identify any questions that could be answered most efficiently from information in the graduate dean's office, or an institutional research or registrar's office, so that you can suggest these resources to the chairmen. We would also like for someone in the dean's office to review each completed form briefly before returning it to us, to be sure that the figures given by the department are consistent with your knowledge of each program.

As noted in the chairmen's memorandum, we will have one more brief questionnaire for each chairman to complete--a few questions about some specific aspects of the program's offerings and procedures, and some judgments about the effect of recent occurrences on program quality. We hope that these really will reach you within another week or so.

Now on to other matters. Several of you have sent us lists of 1970-1972 alumni and descriptive materials about each program; thank you for your prompt response to these requests. If you have not yet sent us these materials, we hope that you are in the process of collecting them and that they will be sent along shortly.

Some of you have requested supplies of the alumni questionnaire so that one or more of your departments can send them directly to their graduates. It now appears that these will not be ready to mail out to you until about the second week in June. The questionnaire will be eight pages, the same size as the student questionnaire, and will be pre-folded to fit in a legal-size envelope, in case you would like to start the process of addressing envelopes.

We hope that the distribution and collection of the student and faculty questionnaires is going along smoothly. If you have not checked recently with departments about reminder notices or other follow-up procedures with non-respondents, you might do this now.

It has come to our attention that some of the questionnaire shipments did not have materials to use when returning the boxes. Therefore, we are enclosing a set of these materials (mailing labels and gummed tape) with each of these memorandums. It would also be helpful if you could mark each box for the attention of Ms. Theresa Jones, B-016. The boxes should be returned by REA Express Collect. You need not wait until you have all of the questionnaires before returning a box; when one fills up, send it along. Questionnaires received after you have returned the bulk of them should be sent by regular mail to me.

Again, don't hesitate to phone if you have questions--609-921-9000, Ext. 2795. We have been very impressed with the efforts the campus coordinators have made with regard to this project that have come to our attention. We remain confident that the project will be worth the effort.

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Developmental Research Division

To: Chairmen, Departments of Chemistry,
History, and Psychology

Date: May 15, 1975

From: Mary Jo Clark
Research Director

Subject: Departmental Profile for
CGS Dimensions of Quality Project

As you know from our previous communications about the Dimensions of Quality in Doctoral Education project, we need some factual information about your department and doctoral program so that these characteristics can be considered in relation to information obtained from your department's students, faculty members, and recent alumni. The accompanying Departmental Profile form has been designed to collect standard information with a minimum of special effort on the part of departmental staff members. This memorandum attempts to anticipate some of the questions that may come up regarding the form, and provides some of our reasons for asking for these particular departmental statistics.

Faculty staffing. This section asks for the number of faculty members in the department, the number who work with doctoral students, and a full-time equivalent figure which is here defined as the total number of full-time faculty plus the full-time equivalent of part-time faculty. Faculty members who are assigned full time to the department should be considered full time, whether or not they spend all of this time in teaching and whether or not part of their salaries are covered by outside funds. Joint, part-time, and adjunct appointments should be considered part time.

Questions e through i ask for information about only those faculty members who teach or supervise doctoral students. One definition of these faculty members might be the faculty members authorized to direct dissertations. Do not include faculty who teach only undergraduate or terminal master's courses even though they occasionally attract a doctoral student registrant. Our purpose here is to obtain a count of the number of persons who are available to work with doctoral students and some information about them as a group. We anticipate that this information is most easily obtained from departmental records, although you may want to turn to the dean's office or an institutional research office for some of it.

Faculty research activity. The items in this section reflect program characteristics that graduate deans thought were important to know about when considering the academic quality of a program. We are frankly uncertain whether departments can answer questions 3 and 4, concerning the total number of publications and research proposals which have been submitted and funded over the last three years, without a great deal of clerical effort. Please at least answer question 4e (actual dollars available to the department each year for research). If you cannot answer the other questions with reasonable accuracy and expenditure of effort, a comment on the last page about the problems they pose for you would be helpful.

Departmental size. This section asks for summary counts of faculty members, instructional support staff members, and students at different levels over the past three years. Again, full-time equivalent is defined as full-time plus the full-time equivalent of part-time persons in the program. The 5a figure for Fall 1974 should be the same as the FTE figure in 1a. Our purpose here is to get some notion of doctoral student enrollment in relation to other aspects of the departmental program.

This section also asks for degrees awarded by the department at each level over the last three years, and for some dollar figures to represent the financial resources available to the department for its total program and for its doctoral program. The check-list of items included in the education and general expense budget figure will be used only to get a rough estimate of the comparability of budget figures supplied by different departments in different universities. Information about dollar amounts available to the department for financial aid, assistantships, and research are requested elsewhere and therefore should not be included in the figures reported in this section.

Enrollments and degrees by area of specialization. This section asks for more detailed information about the current number of faculty members who teach doctoral students by area of specialization; the number of enrolled doctoral students in each area; the number of degrees granted in each area in 1973-74; and the approximate length of time to the degree in each area. The total number of faculty members should equal the figure reported in le. We hope this information will allow us to do some sub-analyses for each discipline according to major area of specialization; in addition, the faculty and student figures will help us determine the extent to which faculty and student questionnaire respondents are representative of area specializations within each department.

Admissions data. These questions ask about the number of applicants for admission, the number admitted, the number enrolled, and the characteristics of the entering class for each of the last three years. Note that we would like this information for your doctoral program only, rather than for all graduate students. Both students with baccalaureate degrees and those who already hold master's degrees should be included in a through h; question 10i asks for the number of newly enrolled doctoral students who had already completed master's level work.

Financial support for students. This section asks for the number of doctoral students who are receiving financial assistance this year, and the total dollar amounts of funds from various sources for student support.

Employment. This section asks for the information you may have about the positions obtained by your doctoral degree recipients in the last two years. We would also like your estimate of the number of these first jobs that were directly related to each graduate's academic field of study.

Comments. The last page is for your comments concerning the statistics you have provided. You may be uncertain whether some of your figures can be fairly compared with figures provided to the same question by programs at other universities; if so, we would like to know how you arrived at your figures and your reservations about their comparability. You may need to leave some items blank because the information is not available or would take an inordinate amount of time to compile; we would like to know about problems you may have with these items. In some cases, you may prefer to supply copies of internal reports that provide essentially the same information rather than answer the questions as they are posed on the form. You may wish to indicate which pieces of information were obtained from the graduate dean's office or some other office at the university rather than from departmental records. Anything that would help us interpret the data and get the most complete and accurate picture of your doctoral program would be helpful.

In an earlier communication, we asked for copies of statements, brochures, or fliers that describe your doctoral program and degree requirements. If you have not already sent these to your campus coordinator to be forwarded to us, we hope that you can do this now.

We realize that this is a particularly busy time for departmental offices and that our initial request for the Departmental Profile information by the end of May is now unrealistic. However, we hope that you will be able to complete the form by the middle of June. Please return it to your campus coordinator in the graduate dean's office, who will send it on to us.

Thanks again for your efforts in the distribution and collection of student and faculty questionnaires as well as the compilation of information for this form. One more short questionnaire, to collect some personal judgments from department chairmen about their programs, will be sent to you in a few days and will complete our data collection efforts in your department.

Your campus coordinator may be able to help with other questions that come up as you or members of your staff complete the Departmental Profile form. If you are still uncertain about an item, please telephone collect to 609-921-9000 for Mary Jo Clark at Extension 2795 or Leonard Baird at Extension 2792.

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Developmental Research Division

To: Campus Coordinators, CGS Project on Dimensions of Quality in Doctoral Education

Date: May 27, 1975

Subject: Information from Department Chairmen

From: Mary Jo Clark
Research Director

Enclosed are the last forms for data collection from your chemistry, history, and psychology departments--a request to department chairmen for some additional information about their programs and their judgments about program quality in a few specific areas. Please send one copy to each of your cooperating chairmen. You will note that we are asking for chairmen to return these forms directly to us, rather than to you, to protect the confidentiality of their responses on some items. We hope that the forms can be completed and returned to us by about the middle of June.

Because of questions raised by some of the coordinators, a few comments about the financial information requested on the Departmental Profile form may be helpful. Most persons would agree, I think, that this information would be nice to have as one set of variables in any study of program quality. But we are also aware that dollar figures can be computed in various ways, can be misleading, and are politically sensitive. In particular, it may be difficult or impossible to separate the costs of doctoral programs from other departmental costs. We included a few financial items on the form in the hope that the information would be available, and also as one way to find out whether or not this is so. But these items are obviously only a small part of the total study; department chairmen should feel free to omit them, or add caveates, if they question the reliability or comparability of their data.

Let me be more specific about the financial items in question. Probably the most troublesome item is 5(j) on page 3 which asks for the approximate dollar amount of the department's education and general expense budget that is used to support the department's doctoral program. Departments may be reluctant to make such an estimate without an agreed-upon formula for its calculation, and the detail that would be required for a precise calculation is beyond the scope of this study. We would like the information if the chairman can make an estimate that seems reasonably reliable; if such an estimate cannot be made, the item should be left blank.

Item 5(k), dollars for doctoral programs from sources outside the university, may be more available but may also be difficult to separate from funds used to support other departmental programs. One possibility here would be to provide the total dollars available to the department from outside sources (not including financial aid and research) with a note that it is not possible to separate out the amount of the funds that are used for the doctoral program.

Items 11(c) and (d) on page 6 ask for total dollars from the university for assistantships and other financial aid to doctoral students. We assume that these figures will reflect the dollar amounts of financial assistance actually awarded to doctoral students this year, regardless of how the funds were allocated, and therefore should not present any particular problems. However, if there are uncertainties about the comparability of these data, the chairman should make a note to this effect.

Item 5(e), total dollars from non-university sources for student aid, is also the sum of awards to doctoral students this year.

Items 4(e) (page 2) and 5(i) (page 3) ask for total dollars to the department for research and for education and general expenses. Since these items do not request a breakdown for doctoral programs only, they should be relatively easy to answer. However, again, if there is reluctance to share this information for use in the research, the chairman should include a note to this effect.

I hope that these comments may help you respond to questions about these items that come up on your campus, and may allay any concern about their intent or purpose. The entire study is exploratory, in the sense that we are attempting to find out how useful the information is in gaining a better understanding of the meaning of quality in graduate education, but also in the sense that we want to find out how accessible this information is and how easily it can be obtained. We certainly don't want the Departmental Profile to be a tiresome burden on department chairmen or members of their staffs. If the information requested cannot be put together with a reasonable expenditure of staff time and effort, we would appreciate their telling us that, along with their comments on the difficulties they encountered.

If you think the department chairmen would be interested in these additional comments about the Departmental Profile form, I hope you will send them a copy of this memorandum.

Thanks again for your help and support.

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Developmental Research Division

Memorandum for: CGS project campus coordinators at Colorado, Florida State, Michigan, Princeton, and Wisconsin

Date: June 18, 1975

From: Mary Jo Clark
Research Director

Re: Alumni questionnaires to be mailed out from your university

Accompanying this memorandum are the number of alumni questionnaires and return envelopes requested by one or more of the departments cooperating in this project at your university. Perhaps it would be helpful if I repeated here a few guidelines for their use:

1. The target population is persons who received doctoral degrees in 1970, 1971, or 1972. Questionnaires should be sent to all of the people who received degrees in these years in the fields you are surveying (chemistry, history, and/or psychology) with the following exceptions:
    a. Names with foreign addresses should be omitted;
    b. Names without reasonably viable addresses should be omitted;
    c. If there are still more than 100 graduates in these years from any one department, sample from the list to send out 100 questionnaires. If the list is by date of degree and there are 150 names with useable addresses in the U.S., it would be appropriate to cross off every third name and send to the rest. You may need to develop other sampling procedures appropriate for your situation. The main thing is to include graduates from each of the three years and various sub-specializations within the department.
2. Envelopes are provided for alumni to return questionnaires to ETS at project expense. We expect to do at least one follow-up on the questionnaires we are mailing out directly to alumni. If you plan to do a follow-up, we will need a list of the names of persons to whom you sent questionnaires. We will check off returns on this list and send you a progress report about three weeks after the questionnaires were sent out.
3. A nice touch, if you can manage it, would be a cover note from the department head encouraging alumni to complete and return the questionnaire.
4. It would be helpful if you could let me know the date(s) when your alumni questionnaires are mailed and the number you send to graduates of each department.

Thanks again for your help, and don't hesitate to phone if you have any questions.

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Developmental Research Division

October 29, 1975

Dr. Allen G. Marr
Dean of the Graduate Division
University of California at Davis
Davis, California 95616

Dear Dr. Marr:

Last spring the Council of Graduate Schools in the United States enlisted your cooperation and that of your doctoral programs in chemistry, history, and psychology, in a study of program characteristics related to educational excellence or quality. The cooperation and patience of your campus coordinator and those associated with each of these departments on your campus has been exceptionally good. Obviously, the study could not have taken place without their generous assistance, or without your support.

We can now begin to share some preliminary study results with you in the form of reports on questionnaire responses by advanced graduate students, faculty members, and recent alumni in each of the cooperating departments. Three copies of each report for departments at your university will be mailed to you within the next few days. We suggest that you send two copies of each report to the appropriate department chairman or director of graduate studies and keep one for your own use.

As you may recall, there are two major purposes of the study. The first is to improve our understanding of the meaning of quality in graduate education by looking broadly at program purposes, environments, and practices as well as reputational ratings. Analyses to shed light on these questions are now underway; a summary of the final project report will be sent to you in the spring. A second, more "applied" purpose, is to develop ways of describing doctoral programs that will be useful for program review and improvement. Obviously, the feedback reports to cooperating departments are a part of this aspect of the project. Your comments concerning actual or potential uses of the information, and any other observations or suggestions concerning the project, would be most welcome.

If, after receiving the feedback reports, you have any questions about your results or the project in general, we hope you will telephone or write to us.

Sincerely,

Mary Jo Clark

Mary Jo Clark
Research Psychologist

cc: Susan Jorgensen, Campus Coordinator

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Developmental Research Division

October 29, 1975

Dean Charles T. Lester
Graduate School
Emory University
Atlanta, Georgia 30322

Dear Dean Lester:

Last spring the Council of Graduate Schools in the United States enlisted your cooperation and that of your doctoral programs in chemistry, history, and psychology in a study of program characteristics related to educational excellence or quality. The cooperation and patience of your campus coordinator and those associated with each of these departments on your campus has been exceptionally good. Obviously, the study could not have taken place without their generous assistance, or without your support.

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As you may recall, there are two major purposes of the study. The first is to improve our understanding of the meaning of quality in graduate education by looking broadly at program purposes, environments, and practices as well as reputational ratings. Analyses to shed light on these questions are now underway; a summary of the final project report will be sent to you in the spring. A second, more "applied" purpose, is to develop ways of describing doctoral programs that will be useful for program review and improvement. Obviously, the feedback reports to cooperating departments are a part of this aspect of the project.

We hope the reports will be of interest to administrators, faculty members, and students concerned with the operation and development of these programs. To help us evaluate the potential usefulness of materials such as these, and to accurately interpret these particular questionnaire results, we would like to visit your campus for a day or so sometime in November or early December to talk with you and department representatives about these matters. We will phone you or your campus coordinator in the next two weeks to discuss specific arrangements for such a visit.

If, after receiving the feedback reports, you have any questions about your results or the project in general, we hope you will telephone or write to us.

Sincerely,

Mary Jo Clark

Mary Jo Clark
Research Psychologist

cc: Marion Combs
Campus Coordinator

QUESTIONS FOR CAMPUS CONFERENCES
DIMENSIONS OF QUALITY IN GRADUATE EDUCATION

1. Any questions about the reports you received?
    - items of particular interest?

2. Likely uses of the reports in your department --
    - faculty committees?
    - student committees?
    - decision-making?
    - program improvement?
    - what would make them more useful?

    - useful in providing info to prospective students

3. What other experiences have you had with program review? State involvement?
    - processes --
    - evaluation --
    - how might they have been more useful?

4. In your opinion, what would be the best way to assess the quality of a doctoral program?
    - reputational ratings?
    - visiting committees?
    - student/faculty/alumni reports?
    - success of graduates?
        - have such surveys been done?
        - what's criterion of success?

    Other procedures you would recommend?

    What about program purposes in relation to the assessment of quality?

5. If there were regional workshops to discuss issues concerned with the assessment of doctoral programs, perhaps based in part on the results of the current research, what issue should be discussed?
    - who should take part in these discussions?
    - (get copies of reports, if possible.)

6. Have you done any validity studies on the use of GRE scores in admissions?

Note: also try to clear up questions about data supplied on the departmental profile (inconsistencies, missing data, etc.) -- and, if no profile has been sent in, try to get basic info re number of faculty, enrollment at different levels, degrees granted, etc.

Appendix B

Selection of Institutions to Participate in the Study

Universities that Award Doctoral Degrees in Chemistry, History, and Psychology

Universities are arranged in order of total number of doctorates granted in a recent three-year period, from largest to smallest. Each group of universities accounts for one quarter of the total number of doctorates granted by these institutions in these years.[1] Randomly selected universities invited to participate in the research are marked with an asterick.

Group I	Three-Year Total No. Doctorates	Total Graduate School Enrollment
University of Illinois	2779	
*University of Wisconsin, Madison	2617	9281
*University of California, Berkeley	2465	9202
*University of Michigan	2285	9460
Michigan State University	2130	7252
Ohio State University	2105	8298
*University of Minnesota	1759	7446
*University of California, Los Angeles	1752	7714
*Stanford University	1643	4954
*New York University	1600	16239
Group II		
Purdue University	1558	6997
*Columbia University	1480	3000
Harvard University	1442	2652
Cornell University	1433	3343
University of Texas, Austin	1323	6031
Pennsylvania State University	1289	6411
University of Southern California	1279	4836
*University of Utah	1265	4324
University of Chicago	1249	5623
*University of Missouri	1239	4377
*University of Pennsylvania	1168	4006
University of Washington	1148	6477
*Northernwestern University	1123	2532
*University of Maryland	1098	9065
*University of Iowa	1055	4857
Group III		
*Indiana University	1040	4565
Yale University	1018	2316
University of Pittsburgh	1003	9348
*Florida State University	962	3465
University of Oregon	943	3025
University of Oklahoma	930	5566
Case Western Reserve University	876	1968
University of Florida	870	3746
University of North Carolina	839	4433
*University of Colorado	811	3723
Syracuse University	809	3779
University of Tennessee	786	5594

	Three-Year Total No. Doctorates	Total Graduate School Enrollment
Group III (continued)		
Rutgers University	783	9297
*University of Kansas	769	3951
*Princeton University	756	1421
SUNY at Buffalo	749	5278
University of Georgia	746	3991
Catholic University of America	740	3995
Duke University	679	1898
University of Arizona	671	5612
*Oklahoma State University	663	2941
University of Massachusetts, Amherst	654	5379
Johns Hopkins University	647	1068
University of Nebraska, Lincoln	643	3151
Group IV		
Boston University	633	4053
Wayne State University	627	7873
*Louisiana State University	627	3258
University of Virginia	616	3470
University of Rochester	608	1626
Southern Illinois University	595	2663
Washington University	527	2720
University of Connecticut	510	4353
Arizona State University	494	6117
*University of California, Davis	479	2630
University of Alabama	472	2283
Brown University	469	1237
University of Northern Colorado	465	1597
Temple University	44[illegible]	6815
Saint Louis University	429	2720
Washington State University	428	1640
University of New Mexico	420	2951
University of Cincinnati	413	4301
University of Notre Dame	412	1219
University of Kentucky	411	2764
Vanderbilt University	385	1088
Tulane University	374	1030
Carnegie-Mellon University	360	1218
University of California, San Diego	335	1199
*West Virginia University	333	2775
Brandeis University	321	
City University of New York	319	2723
University of California, Riverside	310	1198
University of Wyoming	299	1287
Lehigh University	294	2030
Brigham Young University	290	2307
University of Houston	281	3301
Texas Tech University	269	2680
Kansas State University	261	1090
Fordham University	250	1753

Group IV (continued)	Three-Year Total No. Doctorates	Total Graduate School Enrollment
University of Miami	238	2298
George Washington University	228	1362
University of South Carolina	225	4320
University of Delaware	220	2201
University of Denver	216	766
University of Hawaii	211	3567
*Emory University	210	951
University of Mississippi	203	1142
University of California, Santa Barbara	202	
University of North Dakota	198	1175
Loyola University of Chicago	197	2017
SUNY at Albany	188	4296
Kent State University	182	3113
SUNY at Stony Brook	167	4355
*Boston College	157	2135
Texas Christian University	152	1070
University of California, Irvine	139	930
Tufts University	115	781
Northern Illinois University	112	17333
Bryn Mawr College	106	465
University of Montana	90	695
University of California, Santa Cruz	87	307
University of Akron	84	2088
University of Maine	77	1575
Clark University	72	382
*University of Toledo	67	1712
University of Nevada	61	1099
University of Arkansas	60	167
University of Illinois, Chicago Circle	46	1542
SUNY at Binghamton	40	2056

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[1] Most of the information for this table is from the Graduate Programs and Admissions Manual 1973-74, published by the Graduate Record Examinations Board and the Council of Graduate Schools in the United States in 1973. This volume reports total number of doctorates awarded in 1969-1972, and total graduate school enrollment in fall, 1972. All information for eight institutions that are not included in this edition of the Manual are from the 1974-75 edition and represent doctorates awarded 1970-73 and total graduate school enrollment fall 1973 (Brown, Ohio State, Texas Christian, U. of Arkansas at Fayetteville, U. of California at Santa Cruz, U. of Illinois at Chicago Circle, U. of Missouri at Columbia, U. of Virginia). Three additional institutions are not in either edition of the Manual (Brandeis, Illinois at Urbana, U. of California at Santa Barbara); for these institutions, total number of doctorates awarded are from American Universities and Colleges, 11th ed. (American Council on Education, 1973) for the four-year period 1967-1970.

Universities that award doctorates in one or more of the three fields of interest were eliminated from consideration for one of several reasons:

1. the university reported fewer than a total of 10 doctorates per year in a recent three-year period (usually 1970-73);
2. information to the 1973-74 and/or 1974-75 Manual indicated masters or specialist as the highest degree awarded in one or more of the fields;
3. one or more departments not listed in either edition of the Manual and no doctorates awarded by the university in this field 1961-1970, according to American Universities and Colleges, 11th ed. (most of the technical institutes and other specialized institutions fall in this category);
4. no doctorates awarded in one or more of the fields 1961-70, according to the 11th edition of American Universities and Colleges, and no doctorates awarded in the same field(s) 1970-71, according to Earned Degrees Conferred 1970-71 (NCES, Dept. of Health Education and Welfare, 1973), even though the field indicates "doctorate" as the highest degree awarded in the 1974-75 Manual.

Tables on "Earned Doctorates 1961-1970, by Subject and Institution" in the 11th edition of American Universities and Colleges and the National Center for Educational Statistics report on Earned Degrees Conferred 1970-71 were used to identify universities that award doctorates in the three fields but are not listed in either the 1973-74 or 1974-75 editions of the Graduate Programs and Admissions Manual.

Appendix C

Dean's Ratings of Program Characteristics:

Guides to Questionnaire Construction

IMPORTANT PROGRAM CHARACTERISTICS AND ACCEPTABLE MEASURES AS RATED BY GRADUATE DEANS

In the summer of 1973, a panel of about 60 graduate deans rated the importance of a great many Ph.D. program characteristics for judgments about educational quality and then rated the adequacy or acceptability of several alternative ways to measure each important characteristic.[1] The program characteristics and measures that were endorsed by the deans are summarized in the following tables according to four potential sources of information: university or departmental records, faculty questionnaires, student questionnaires, and alumni questionnaires. Fifty seven respondents are represented in these tabulations (as opposed to 43 available for tabulations reported in the project report) and responses from deans at high-prestige universities are tabulated separately for contrast with total responses.

Reading the Tables

The tables start with indicators of important program characteristics that should be available from university or department records. The number in parentheses following each characteristic is its mean rating of importance to judgments about quality based on a four-point scale from "essential" to "not important." Under each characteristic are listed the indicators that were most highly endorsed by graduate deans as measures of that characteristic. The deans' ratings of these measures are summarized on the right side of the table. The first column presents "mean adequacy" ratings based on a four-point scale from "very good indicator" to "inadequate indicator" for all the graduate deans. The second column is the same summary rating computed only from responses by graduate deans at high-prestige universities. The responses of deans from highly prestigious universities were tabulated separately in order to test the hypothesis that some measures of quality may be less acceptable in these settings than among graduate programs generally. A comparison of the mean ratings in the first two columns suggests that deans from prestigious institutions rate the adequacy of most measures very much like ratings given by deans in general. If anything, most measures were endorsed slightly more highly by the deans from prestigious institutions.

The third and fourth columns on the right side of the tables represent the percent of graduate deans who indicated that each measure was the one preferred method for measuring the educational quality of a given program characteristic. These figures provide a rough index of consensus among the deans about the best indicators, though of course the extent of their agreement was affected to some extent by the number of optional measures that were presented for each program characteristic on the original questionnaire.

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[1] Clark, M. J. The Assessment of Quality in Ph.D. Programs: A Preliminary Report and Judgments by Graduate Deans, GRE Board Research Report No. 72-7aR. Princeton, N.J.: Graduate Record Examinations Boards, 1973.

The last column of figures represents the percent of all responding deans who said that the information implied by the measure was currently available on their campuses without new data collection. These percentages are probably conservative, since only persons who responded affirmatively were counted in the tabulations. However, they tend to support the view that a lot of information about the characteristics of program participants and program operation should be available from department or university records, but that very little information about student, faculty, or alumni attitudes and opinions is currently available.

In some cases, two or more sources of information were possible for the characteristics and measures that were endorsed by the deans. Characteristics listed under more than one source of information have been cross-referenced in the tables.

The deans' opinions about the assessment of quality in doctoral programs guided construction of data collection instruments for advanced graduate students, faculty members, and recent alumni, as well as a profile of department activities and a questionnaire to department chairmen.

University/Department Records

Characteristic	Measures: Mean adequacy Total (N=57)	Mean adequacy Top 50 (N=23)	Percent preferred Total (N=57)	Percent preferred Top 50 (N=23)	Percent available Total (N=57)
1. Academic training of faculty (3.57)					
Percent with Ph.D.'s or equivalent degrees	3.35	3.22	32	22	96
Percent of Ph.D.'s from "top" programs in each field, as defined by a reputational survey	3.33	3.52	44	48	63
2. Faculty research (or other scholarly or creative) activity (3.41)					
Average number research proposals funded in the last three years per FTE faculty (Also see Faculty questionnaire, #1)	3.35	3.39	26	30	74
3. Faculty (or other scholarly or creative) productivity (3.20)					
Weighted average number publications (giving progressively more weight to refereed journals, single authorship of articles, senior authorship of books, etc.) in the past three years (sub. no. patents or artistic performances or products where appropriate)	3.68	3.61	74	61	21
Average number journal articles published in the last three years per FTE faculty	3.49	3.52	7	4	67
4. General academic ability of students entering the program (3.61)					
Avg. score on graduate aptitude test (GRE, MAT, etc.)	3.42	3.48	25	22	65
Avg. undergraduate GPA	3.46	3.57	37	43	84
Avg. score on appropriate GRE Advanced Test (or other ach. test)	3.14	3.26	9	9	58
5. Achievements, knowledge, and/or skills of students at time of completion of degree (3.61)					
Percent of graduates in the last three years who obtained employment directly related to their field of specialization	3.28	3.17	28	30	47
Percent of graduates in the last three years who published something prior to the degree (Also see Alum. questionnaire, #2)	3.27	3.26	21	22	28

University/Department Records (p.2)

Characteristic	Measures				
	Mean adequacy		Percent preferred		Percent available
	Total (N=57)	Top 50 (N=23)	Total (N=57)	Top 50 (N=23)	Total (N=57)
6. Professional accomplishments of graduates (3.38)					
Avg. no. publications by those who graduated in the last five years	3.30	3.35	23	30	11
Percent of graduates currently employed by doctorate-awarding universities (Also see Alum. questionnaire, #3)	3.12	3.35	14	9	39
7. University financial support for the program (3.60)					
Education and general expense budget per FTE student	3.05	3.00	19	22	74
8. External financial support for the program (3.18)					
Outside funds as a percent of total program budget	3.42	3.52	35	39	70
Avg. dollar income per FTE faculty from outside sources over the past three years	3.33	3.43	42	35	67
Dollar amount of federal research projects grants and contracts over the past three years	3.23	3.39	12	9	79
9. Financial support for students (3.11)					
Avg. dollars for all forms of financial assistance per FTE student	3.50	3.52	49	43	72
Percent of students receiving any form of financial assistance	3.21	3.30	19	13	75
10. Admissions policies (3.43)					
Percent of qualified applicants who are admitted, as reported by the admission committee	3.11	3.10	19	22	61
11. Provision for the welfare of faculty members (3.42)					
Median salary by rank (Also see Faculty questionnaire, #8)	3.20	3.18	21	30	84

University/Department Records (p.3)

Characteristic	Measures				
	Mean adequacy		Percent preferred		Percent available
	Total (N=57)	Top 50 (N=23)	Total (N=57)	Top 50 (N=23)	Total (N=57)
12. Efficiency of degree production (2.92)					
Percent of those who enroll who earn the Ph.D.	3.49	3.62	46	43	72
Estimated total avg. time required to complete the degree	3.16	3.24	9	13	60
Ratio of doctorates awarded to no. of graduate faculty and to no. of enrolled students	3.15	3.14	23	26	70

Faculty Questionnaire

Characteristic	Measures: Mean adequacy, Total (N=57)	Measures: Mean adequacy, Top 50 (N=23)	Measures: Percent preferred, Total (N=57)	Measures: Percent preferred, Top 50 (N=23)	Measures: Percent available, Total (N=57)
1. Faculty research (or other scholarly or creative) activity (3.41)					
Average number invited presentations of research results in the past year (visiting lectures, colloquia, workshops, professional meetings, etc.) per FTE faculty	3.37	3.48	18	22	40
Percent of faculty actively involved in the publication of research results (journal editor, editorial board members, referee for submitted articles, etc.) (Also see Univ./Dept. records, #2)	3.18	3.17	16	17	47
2. Faculty involvement in program affairs (2.94)					
Faculty degree of agreement with and commitment to the purposes and goals of the program	3.32	3.30	42	39	7
Faculty satisfaction with influence on important decisions concerning the program	3.28	3.26	39	39	7
3. Group morale or esprit (2.78)					
Avg. faculty-reported satisfaction with program leadership, enthusiasm for the program, loyalty, involvement, etc.	3.39	3.09	53	48	9
4. Quality of the library (3.60)					
Adequacy of relevant holdings as judged by faculty members	3.48	3.57	32	48	32
5. Quality of laboratory equipment and facilities (including facilities for the creative arts) (3.47)					
Adequacy of laboratory equipment and facilities as rated by faculty members	3.44	3.48	28	39	25

Faculty Questionnaire (p.2)

	Measures				
	Mean adequacy		Percent preferred		Percent available
Characteristic	Total (N=57)	Top 50 (N=23)	Total (N=57)	Top 50 (N=23)	Total (N=57)
6. Quality of computer facilities (3.07)					
Adequacy of computer facilities for needs of the program as rated by faculty members	3.40	3.48	25	43	35
7. Purposes of the program (3.49)					
Clarity of program purposes and plans, as judged by faculty members (Also see Alum. questionnaire, #5)	3.20	3.18	23	35	18
8. Provision for the welfare of faculty members (3.42)					
Faculty satisfaction with freedom to plan courses and conduct research without internal or external interference	3.17	3.32	23	30	12
Provision for assistance to new and young faculty, as judged by faculty members (Also see Univ./Dept. records, #11)	2.98	3.05	5	0	12
9. Program leadership and decision-making (3.37)					
Quality of leadership provided by the program chairman as judged by faculty members	3.39	3.41	37	43	18
10. Relationships with cognate programs (2.94)					
Relationships and interchanges with cognate programs as rated by faculty members (Also see Student questionnaire, #10)	3.08	3.20	16	26	16

Special: Quality ratings of programs and faculties for other programs in the same field in this study

Student Questionnaire

Characteristic	Measures: Mean adequacy Total (N=57)	Measures: Mean adequacy Top 50 (N=23)	Measures: Percent preferred Total (N=57)	Measures: Percent preferred Top 50 (N=23)	Measures: Percent available Total (N=57)
1. Faculty concern for student development and welfare (3.11)					
Average student (or former student) rating on a scale measuring faculty concern for student development and welfare, accessibility, advising skill, teaching effectiveness, etc. (Also see Alum. questionnaire, #1)	3.25	3.04	58	61	9
2. Student satisfaction with various aspects of the degree program (2.89)					
Percent of students who would recommend the program to others with similar interests and abilities	3.37	3.13	49	48	4
Avg. student-rated satisfaction with specified academic and non-academic aspects of the program	3.07	3.04	30	35	9
Congruence of student career interests with program purposes and emphases, as judged by enrolled students	3.13	3.05	44	30	7
3. Group morale or esprit (2.81)					
Student sense of community, feeling of shared interests and involvement in worthwhile activities, as rated by students	3.32	3.30	25	30	9
Avg. student satisfaction with rate of academic progress	2.87	2.83	14	13	5
4. Provision for the evaluation of student progress (3.41)					
Clarity of requirements and standards for progression from entrance to candidacy with stated times for review and evaluation, as judged by students (Also see Alum. questionnaire, #6)	3.23	3.32	25	43	14

Student Questionnaire (p.2)

	Measures				
	Mean adequacy		Percent preferred		Percent available
Characteristic	Total (N=57)	Top 50 (N=23)	Total (N=57)	Top 50 (N=23)	Total (N=57)
5. Job placement of graduates (3.31)					
Satisfaction with program efforts to place graduates, as judged by students (Also see Univ./Dept. records, #5 and #6)	3.32	3.36	18	13	11
6. Provision for the advisement of students (3.30)					
Quality of the advising system, as rated by students (Also see Alum. questionnaire, #7)	3.45	3.50	32	39	11
7. Student-faculty interaction (3.29)					
Student-reported satisfaction with opportunity to work closely with at least one member of the faculty (Also see Alum. questionnaire, #8)	3.38	3.14	49	52	4
8. Internships or other opportunities for relevant student experiences (3.17)					
Value of the internship or assistantship as rated by students who have completed the experience (Also see Alum. questionnaire, #9)	3.22	3.05	40	39	11
9. Degree requirements (3.16)					
Flexibility of program requirements sufficient to meet individual student needs, as judged by students (Also see Alum. questionnaire, #10)	3.11	3.25	14	17	7
10. Relationships with cognate programs (2.94)					
Relationships and interchanges with cognate programs as rated by students (Also see Faculty questionnaire, #10)	3.06	3.10	5	9	11

Alumni Questionnaire

Characteristic	Measures: Mean adequacy Total (N=57)	Measures: Mean adequacy Top 50 (N=23)	Measures: Percent preferred Total (N=57)	Measures: Percent preferred Top 50 (N=23)	Measures: Percent available Total (N=57)
1. Concern for student development and welfare (3.11)					
Average student (or former student) rating on a scale measuring faculty concern for student development and welfare, accessibility, advising skill, teaching effectiveness, etc. (Also see Student Questionnaire, #1)	3.25	3.04	58	61	9
2. Achievements, knowledge, and/or skills of students at time of completion of degree (3.61)					
Percent of graduates in the last three years who obtained employment directly related to their field of specialization	3.28	3.17	28	30	47
Percent of graduates in the last three years who published something prior to the degree (Also see Univ./Dept. records, #5)	3.27	3.26	21	22	28
3. Professional accomplishments of graduates (3.38)					
Avg. no. publications by those who graduated in the last five years	3.30	3.35	23	30	11
Percent of graduates currently employed by doctorate-awarding universities (Also see Univ./Dept. records, #6)	3.12	3.35	14	9	39
4. Student perceptions of program quality (2.91)					
Avg. alumni (1-5 years) rating of experiences in the program	3.60	3.61	68	65	2
5. Purposes of the program (3.49)					
Clarity of program purposes and plans, as judged by recent graduates (Also see Faculty questionnaire, #7)	3.29	3.33	11	9	4

Alumni Questionnaire (p.2)

Characteristic	Measures Mean adequacy Total (N=57)	 Mean adequacy Top 50 (N=23)	 Percent preferred Total (N=57)	 Percent preferred Top 50 (N=23)	 Percent available Total (N=57)
6. Provision for the evaluation of student progress (3.41)					
Clarity of requirements and standards for progression from entrance to candidacy with stated times for review and evaluation, as judged by recent alumni (Also see Student questionnaire, #4)	3.23	3.32	25	43	14
7. Provision for the advisement of students (3.30)					
Quality of the advising system, as reated by recent graduates (Also see Student questionnaire, #6)	3.46	3.45	39	30	4
8. Student-faculty interaction (3.29)					
Student-reported satisfaction with opportunity to work closely with at least one member of the faculty (Also see Student questionnaire, #7)	3.38	3.14	49	52	4
9. Internships or other opportunities for relevant student experiences (3.17)					
Value of the internship or assistantship as rated by students who have completed the experience (Also see Student questionnaire, #8)	3.22	3.05	40	39	11
10. Degree requirements (3.16)					
Flexibility of program requirements sufficient to meet individual student needs, as judged by recent graduates (Also see Student questionnaire, #9)	3.11	3.25	14	17	7

APPENDIX D

Questionnaires Used in the Study

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THE COUNCIL OF
GRADUATE SCHOOLS
IN THE UNITED STATES

One Dupont Circle, N.W., Washington, D. C. 20036 • Phone: Area Code 202: 223-3791

J. BOYD PAGE
President

April, 1975

Dear Doctoral Student:

We need your help in a major national research effort to develop better ways of describing university programs of doctoral study. Sponsored by The Council of Graduate Schools with funds from the National Science Foundation, the project is collecting information from faculty members and doctoral students in three departments at 20 randomly selected universities across the country. Your department is one of those chosen for participation in the field study.

The questionnaire on the following pages will take about a half-hour of your time to complete. An envelope is provided to insure the confidentiality of your responses; your completed questionnaire will be seen only by the research staff, and summaries of the information will not identify universities by name in any report of the project. However, your department will receive a summary of responses made by its doctoral students and graduate faculty members that can be used for self-study and program improvement.

The purpose of this project is to identify and measure a variety of characteristics of doctoral programs that are related to the achievement of educational excellence. In addition to the usefulness of such measures for program review, they would improve information available for the guidance of prospective graduate students. A detailed description of the project is available from your department chairman.

We think you will find the questionnaire interesting to answer and invite your comments on the items as well as on your experiences in this program.

The accuracy of the research findings, and of the summary report that will be returned to your department, is dependent on your candid response to the following questions. We believe the importance of the study will justify the time you give it. Please complete the questionnaire and return it while you have it at hand.

On behalf of The Council of Graduate Schools, I thank you for your cooperation.

Sincerely,

J. B. Page

J. Boyd Page
President

CGS DOCTORAL STUDENT QUESTIONNAIRE

1. To what extent do you agree with the following statements about your department and its doctoral programs of study? (Circle one number on each line.)

	Disagree strongly (1)	Disagree with reservations (2)	Agree with reservations (3)	Agree strongly (4)
a. The academic demands upon students in this department are very heavy	1	2	3	4
b. A single "school of thought" or scholarly viewpoint dominates this department	1	2	3	4
c. This department makes a consistent effort to help students become effective teachers	1	2	3	4
d. If I had a chance to go to another school without losing much in the transfer, I would go	1	2	3	4
e. This department is providing me with a very good preparation for my later professional work	1	2	3	4
f. Students in this department have opportunities to influence decisions in areas such as admissions policy, curriculum, etc.	1	2	3	4
g. It is fairly common for students in this department to get the feeling that they are being used or exploited by members of the faculty	1	2	3	4
h. This graduate program is one of the best in the field	1	2	3	4
i. This department has a humane environment characterized by mutual respect and concern between students and professors	1	2	3	4
j. Departmental practices create a lot of tension in students	1	2	3	4
k. I would advise a friend with similar interests to come to this department	1	2	3	4
l. There are many opportunities to take courses in other programs and fields	1	2	3	4
m. Faculty members here emphasize ways in which knowledge and skills in this field can be used to solve social problems and improve society	1	2	3	4
n. Students here are highly competent	1	2	3	4
o. I have learned a great deal as a student in this department	1	2	3	4
p. Competition among students is encouraged in this department	1	2	3	4
q. Students here tend to support and help each other meet the academic demands of the program	1	2	3	4
r. The department does a good job of placing its graduates in appropriate positions	1	2	3	4
s. Many faculty members do not prepare adequately for their graduate courses	1	2	3	4
t. This department is a stimulating and exciting place to study	1	2	3	4

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How would you rate your department's faculty, facilities, and programs? If an item listed below doesn't apply to your field, or if you feel you cannot respond, skip the item. (Circle one number on each line.)

2. Characteristics of the Graduate Faculty

	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Accessibility to students	1	2	3	4
b. Helpfulness to students in identifying sources of financial assistance	1	2	3	4
c. Useful criticism of your work	1	2	3	4
d. Concern for your professional development	1	2	3	4
e. Guidance in the selection of courses	1	2	3	4
f. Willingness to go out of their way to help you if you ask for it	1	2	3	4
g. Helpfulness in dealing with classwork	1	2	3	4
h. Knowledge of the field	1	2	3	4
i. Scholarship or research excellence	1	2	3	4
j. Excitement for new ideas in the field	1	2	3	4
k. Overall quality of teaching	1	2	3	4
l. Interest in graduate students' welfare, including their personal problems	1	2	3	4
m. Helpfulness to students in finding appropriate jobs after graduation	1	2	3	4
n. Appropriateness of teaching methods (e.g., seminars, lectures, tutorials, audio-visual aids, etc.)	1	2	3	4

3. Facilities

	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Library holdings	1	2	3	4
b. Laboratory facilities	1	2	3	4
c. Computer facilities	1	2	3	4
d. Classrooms and other instructional space	1	2	3	4

4. **Degree Requirements and Curriculum**	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Clarity of stated requirements for the degree	1	2	3	4
b. Relevance of admissions requirements to degree requirements	1	2	3	4
c. Agreement between degree requirements and the stated objectives of the department	1	2	3	4
d. Relevance of courses in related fields to meet degree requirements	1	2	3	4
e. Appropriateness of language requirements	1	2	3	4
f. Opportunities for independent study	1	2	3	4
g. Flexibility of program requirements to meet individual needs	1	2	3	4
h. Logical structure or sequence of courses	1	2	3	4
i. Fairness with which qualifying examinations (or equivalent) are administered	1	2	3	4
j. Breadth of course and program offerings	1	2	3	4
k. Depth of course and program offerings	1	2	3	4
l. Relevance of requirements to anticipated work in the field	1	2	3	4
m. Relations with related departments in the university	1	2	3	4

5. **Assistantships** (teaching or research. NOTE: skip these items if you have not held an assistantship in this department.)	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Number of assistantships available in the department	1	2	3	4
b. Stipend or payment for assistantships	1	2	3	4
c. Absence of unnecessary "dirty work" in duties assigned to assistants	1	2	3	4
d. Extent to which duties contribute to student academic development	1	2	3	4
e. Chance for the assistant to act in a professional role	1	2	3	4
f. Relevance of work to ultimate professional duties	1	2	3	4
g. Degree to which staff members treat assistants as colleagues	1	2	3	4
h. Fair and equitable administration of assistantships	1	2	3	4
i. Supervision of persons on assistantships	1	2	3	4
j. Office space and equipment for student assistants	1	2	3	4

6. About how many of the doctoral students in your department are characterized by each of the following statements? Base your judgments on the doctoral students you have known or observed in the last three years (or since you entered this department). (Circle one number on each line.)

	Less than 25 percent (1)	25 to 50 percent (2)	50 to 75 percent (3)	More than 75 percent (4)
a. They work hard to meet the intellectual demands of the department.	1	2	3	4
b. They demonstrate original ways of handling research or scholarly problems.	1	2	3	4
c. They share ideas and support one another in academic work.	1	2	3	4
d. They pursue subjects by doing a good deal of unassigned reading.	1	2	3	4
e. There is a strong sense of competition among them.	1	2	3	4
f. They handle assignments with care and responsibility.	1	2	3	4
g. They are friendly and supportive of one another in their personal lives.	1	2	3	4
h. They become distracted from their studies by non-academic or non-professional interests.	1	2	3	4
i. They demonstrate enthusiastic involvement with the field during informal discussions with faculty and students.	1	2	3	4
j. They present their ideas in classes, seminars, and papers in a poorly organized and disjointed fashion.	1	2	3	4
k. They are commited to the pursuit of scholarship.	1	2	3	4
l. Their classroom comments and discussions are interesting and thought provoking.	1	2	3	4
m. They show imagination and originality in presenting or teaching a traditionally dull topic.	1	2	3	4
n. They continue to work on projects until they are successfully completed, despite one or more setbacks.	1	2	3	4
o. They offer well-founded and constructive criticisms of other students' presentations.	1	2	3	4
p. They are heavily dependent on direction from the faculty.	1	2	3	4
q. They fail to complete major assignments on time.	1	2	3	4
s. They maintain a high level of intellectual honesty in their work.	1	2	3	4

7. Three general areas of emphasis describe most doctoral-level graduate programs. Some programs give primary attention to the preparation of scholars and researchers, others lean more toward the preparation of college teachers, and still others give emphasis to preparing practicing professionals for applied and service positions (e.g., secondary school teachers, museum curators, clinical psychologists, industrial chemists). How much importance do you think your department now assigns these three different purposes or functions? (Circle one number on each line.)

	Degree of Importance				
	Extreme	Considerable	Some	Little	None
a. Preparing scholars/researchers	5	4	3	2	1
b. Preparing college teachers	5	4	3	2	1
c. Preparing other practitioners	5	4	3	2	1

8. Now, please answer the same question in terms of your personal goals. How much importance do you assign to these three different purposes or functions? (Circle one number on each line.)

	Degree of Importance				
	Extreme	Considerable	Some	Little	None
a. Preparing scholars/researchers	5	4	3	2	1
b. Preparing college teachers	5	4	3	2	1
c. Preparing other practitioners	5	4	3	2	1

To be able to analyze our results as meaningfully as possible, we would like to know a few things about you. Please check one response or fill in the blank for each of the following items.

9. In what year did you receive your undergraduate degree? 19____

10. In what year did you first enroll in this graduate program? 19____

11. In what year do you expect to receive your doctorate? 19____

12. What is your present degree goal?

( ) Ph.D. ( ) Ed.D.
( ) D.A. ( ) Other (what?____
________________________________)

13. Have you done graduate study at some other university?

( ) Yes, in the same field
( ) Yes, in a different field
( ) No

14. Are you currently enrolled full or part time?

( ) Full time ( ) Part time

15. Approximately what overall grade average did you receive in undergraduate school, and what grades have you received so far in graduate study? (Important: If your college did not use letter grades--A, B, C, etc.--please mark the letter grade that is the closest equivalent to your grade average. Circle one number in each column.)

	Undergraduate grades ↓	Graduate grades ↓
C or lower (2.49 or below)	1	1
C+ (2.50 - 2.99)	2	2
B (3.00 - 3.24)	3	3
B+ (3.25 - 3.49)	4	4
A to A+ (3.50 - 3.99)	5	5
All A's (4.00)	6	6
No grades	7	7

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16. If you are employed, what kind of job do you have? If you have more than one job, mark the one that takes the most time.

- ( ) I am not employed
- ( ) Research assistantship or equivalent
- ( ) Teaching assistantship or equivalent
- ( ) Other university employment
- ( ) Employment outside the university in a job relevant to my studies
- ( ) Employment outside the university in a job not relevant to my studies

17. If you are employed, about how many hours each week do you spend on the job?

- ( ) I am not employed
- ( ) 10 or less
- ( ) 11 - 20
- ( ) 21 - 30
- ( ) 31 or more

18. What kind of position do you hope to hold on completion of graduate school? If you are considering more than one, mark one first preference.

- ( ) Postdoctoral fellowship
- ( ) Teaching or administration in elementary or secondary school
- ( ) Teaching in junior college
- ( ) Teaching in a 4-year college or university
- ( ) University research and teaching
- ( ) College or university administration
- ( ) Research in industry or with nonprofit organization or institute
- ( ) Self-employed professional practice
- ( ) Professional practice with a clinic, hospital, or agency
- ( ) Executive position (administrator, curator, etc.) in a nonacademic organization including government
- ( ) Other (Specify:______________ ________________________________)

19. What is your sex?

( ) Male ( ) Female

20. What is your age? __________

21. Are you a United States citizen?

( ) Yes ( ) No

22. How do you describe yourself?

- ( ) American Indian or Native American
- ( ) Black, Afro-American or Negro
- ( ) Mexican-American or Chicano
- ( ) Oriental or Asian-American
- ( ) Puerto Rican or Spanish-speaking American
- ( ) White or Caucasian
- ( ) Other

23. In what university are you currently enrolled?

____

24. Indicate (a) your field of graduate study and (b) the one sub-specialization with which you identify most closely.

(a) Field
↓ (b) Specialization (b)
↓ ↓

- ( ) CHEMISTRY
  - ( ) Analytical
  - ( ) Biochemical
  - ( ) Inorganic
  - ( ) Organic
  - ( ) Physical
  - ( ) Other
- ( ) HISTORY
  - ( ) Ancient
  - ( ) Medieval
  - ( ) Modern
  - ( ) American
  - ( ) Third-world
  - ( ) Other
- ( ) PSYCHOLOGY
  - ( ) Educational
  - ( ) Measurement
  - ( ) Personality
  - ( ) Developmental
  - ( ) Experimental
  - ( ) Organizational
  - ( ) Clinical
  - ( ) Social
  - ( ) Other

25. We invite your additional comments about your department as a place for doctoral study. Your reactions to this questionnaire as a means of systematically collecting the opinions of graduate students about their programs are also welcome. Thank you for completing the questionnaire.

Please seal your completed questionnaire in the accompanying envelope, put your name on the outside of the envelope, and return it to your department office (or follow other instructions that may accompany the questionnaire when it is distributed). There is no name on the questionnaire; we ask for your name on the envelope only so that we can tell who has completed the form and who has not. The questionnaires will be removed and the envelopes discarded after they have been returned to the researchers.

THE COUNCIL OF
GRADUATE SCHOOLS
IN THE UNITED STATES

One Dupont Circle, N.W., Washington, D. C. 20036 • Phone: Area Code 202: 223-3791

J. BOYD PAGE
President

April, 1975

Dear Professor:

We need your help in a major national research effort to develop better ways of describing university programs of doctoral study. Sponsored by the Council of Graduate Schools with funds from the National Science Foundation, the project is collecting information from faculty members and doctoral students in three departments at 20 randomly selected universities across the country. Your department is one of those chosen for participation in the field study.

The questionnaire on the following pages will take about a half-hour of your time to complete. An envelope is provided to insure the confidentiality of your responses; your completed questionnaire will be seen only by the research staff, and summaries of the information will not identify universities by name in any report of the project. However, your department will receive a summary of responses made by its doctoral students and graduate faculty members that can be used for self-study and program improvement.

The purpose of this project is to identify and measure a variety of characteristics of doctoral programs that are related to the achievement of educational excellence. In addition to the usefulness of such measures for program review, they would improve information available for the guidance of prospective graduate students. A detailed description of the project is available from your department chairman.

We think you will find the questionnaire interesting to answer and invite your comments on the items as well as on your experiences in this program.

The accuracy of the research findings, and of the summary report that will be returned to your department, is dependent on your candid response to the following questions. We believe the importance of the study will justify the time you give it. Please complete the questionnaire and return it while you have it at hand.

on behalf of the Council of Graduate Schools, I thank you for your cooperation.

Sincerely,

J. B. Page

J. Boyd Page
President
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CGS FACULTY QUESTIONNAIRE

1. To what extent do you agree with the following statements about your department and its doctoral programs of study? (Circle one number on each line.)

	Disagree strongly (1)	Disagree with reservations (2)	Agree with reservations (3)	Agree strongly (4)
a. The academic demands upon students in this department are very heavy.	1	2	3	4
b. Faculty members in this department seem to be genuinely interested in the welfare and personal development of graduate students..	1	2	3	4
c. Different personalities and scholarly points of view are welcome in this department.	1	2	3	4
d. The conflicting demands of my job are a source of considerable personal strain..	1	2	3	4
e. There is wide faculty involvement in important departmental decisions..	1	2	3	4
f. Some professors in this department unduly exploit their students to advance their own research.	1	2	3	4
g. I hardly ever get the time to give a piece of work the attention it deserves..	1	2	3	4
h. My personal views about graduate education in my field are very compatible with the objectives and procedures of this department..	1	2	3	4
i. If I had a reasonable offer, I would move to another university.	1	2	3	4
j. Faculty in this department feel very secure in their academic freedom to conduct courses and research without undue departmental or university restrictions..	1	2	3	4
k. Faculty and students often arrange courses and projects with persons in other departments.	1	2	3	4
l. Faculty here often try to apply their knowledge and skills in solving social problems and improving society.	1	2	3	4
m. The department has a humane environment characterized by mutual respect and concern between students and faculty..	1	2	3	4
n. This department is really a collection of individuals; very little in the way of truly team or joint effort takes place in this department.	1	2	3	4
o. This department tends to put more emphasis on training technically competent craftsmen than on training idea-oriented scholars..	1	2	3	4
p. In general, I am satisfied with my opportunities to influence departmental policies and decisions..	1	2	3	4

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2. How would you rate each of the following aspects of your department or university? (Circle one number on each line.)

	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. The intellectual environment at your university	1	2	3	4
b. The intellectual environment in your department	1	2	3	4
c. Personal relations among the faculty in your department	1	2	3	4
d. Faculty/student relations in your department	1	2	3	4
e. Clarity of doctoral degree requirements in your department	1	2	3	4
f. Agreement between degree requirements and the stated objectives of your department	1	2	3	4
g. Fairness with which degree requirements are administered	1	2	3	4
h. University library holdings relevant to your field	1	2	3	4
i. Laboratory or other equipment needed for teaching and research in your field	1	2	3	4
j. Computer facilities to meet the needs in your field	1	2	3	4
k. The relationships between your department and cognate departments in the university	1	2	3	4
l. Clarity of your department's objectives and plans for the next few years	1	2	3	4
m. The scholarship and research ability of the department faculty	1	2	3	4
n. Overall quality of teaching at the graduate level in your department	1	2	3	4
o. Department procedures for evaluating graduate student progress.	1	2	3	4
p. Department procedures for evaluating student comprehensive examinations	1	2	3	4
q. Department procedures for dissertation supervision and defense.	1	2	3	4
r. The scholarship and research ability of students in your department	1	2	3	4
s. The "fit" between your program goals and standards and the needs or interests of current students	1	2	3	4
t. Cohesiveness of the doctoral curriculum	1	2	3	4
u. Departmental helpfulness to students in finding appropriate jobs after graduation	1	2	3	4
v. The administrative management of your department	1	2	3	4
w. Departmental effort toward the career development of junior faculty	1	2	3	4
x. Overall adequacy of physical and financial resources for a doctoral program in your field	1	2	3	4

3. About how many of the doctoral students in your department are characterized by each of the following statements? Base your judgments on the doctoral students you have known or observed in the last three years (or since you entered this department). (Circle one number on each line.)

	Less than 25 percent (1)	25 to 50 percent (2)	50 to 75 percent (3)	More than 75 percent (4)
a. They work hard to meet the intellectual demands of the department.	1	2	3	4
b. They demonstrate original ways of handling research or scholarly problems.	1	2	3	4
c. They share ideas and support one another in academic work.	1	2	3	4
d. They pursue subjects by doing a good deal of unassigned reading.	1	2	3	4
e. There is a strong sense of competition among them.	1	2	3	4
f. They handle assignments with care and responsibility.	1	2	3	4
g. The are friendly and supportive of one another in their personal lives.	1	2	3	4
h. They become distracted from their studies by non-academic or non-professional interests.	1	2	3	4
i. They demonstrate enthusiastic involvement with the field during informal discussions with faculty and students.	1	2	3	4
j. They present their ideas in classes, seminars, and papers in a poorly organized and disjointed fashion.	1	2	3	4
k. They are commited to the pursuit of scholarship.	1	2	3	4
l. Their classroom comments and discussions are interesting and thought provoking.	1	2	3	4
m. They show imagination and originality in presenting or teaching a traditionally dull topic.	1	2	3	4
n. They continue to work on projects until they are successfully completed, despite one or more setbacks.	1	2	3	4
o. They offer well-founded and constructive criticisms of other students' presentations.	1	2	3	4
p. They are heavily dependent on direction from the faculty.	1	2	3	4
q. They fail to complete major assignments on time.	1	2	3	4
r. They maintain a high level of intellectual honesty in their work.	1	2	3	4

4. Three general areas of emphasis describe most doctoral-level graduate programs. Some programs give primary attention to the preparation of scholars and researchers, others lean more toward the preparation of college teachers, and still others give emphasis to preparing practicing professionals for applied and service positions (e.g., secondary school teachers, museum curators, clinical psychologists, industrial chemists). How much importance do you think your department now assigns these three different purposes or functions? (Circle one number on each line.)

	Degree of Importance				
	Extreme	Considerable	Some	Little	None
a. Preparing scholars/researchers	5	4	3	2	1
b. Preparing college teachers	5	4	3	2	1
c. Preparing other practitioners	5	4	3	2	1

5. How much importance do you think the department ought to assign to each of these purposes? (Circle one number on each line.)

	Degree of Importance				
	Extreme	Considerable	Some	Little	None
a. Preparing scholars/researchers	5	4	3	2	1
b. Preparing college teachers	5	4	3	2	1
c. Preparing other practitioners	5	4	3	2	1

6. In a typical week during the academic year, about how many hours do you spend in each of the following activities? (Please account for all of your professional time.)

	Number of hours
a. Teaching, preparing for classes, evaluating student tests or papers	_______
b. Advising students and directing students' research	_______
c. Research and scholarly writing	_______
d. Program or university administration (including committees)	_______
e. Private practice	_______
f. Other professional activities including consulting	_______
Total:	_______

7. How much of your time in (a) and (b) above (teaching, advising, supervising research) is spent with or for doctoral students?

( ) more than 75%   ( ) 25 - 49%

( ) 50 - 75%   ( ) less than 25%

8. Please circle the appropriate response to indicate your experience in the following areas:

	Yes (1)	No (2)
a. Have you served on government or foundation review committees, site visit teams or national advisory councils in the last three years?	1	2
b. Have you held a postdoctoral fellowship?	1	2
c. Have you received a serious job inquiry from another employer in the last two years?	1	2
d. Have you received an award for outstanding teaching?	1	2
e. Have you received an award for outstanding research or scholarly writing?	1	2
f. Have you received an award for outstanding professional practice?	1	2
g. Have you held office or served on boards of a national professional association or organization?	1	2
h. Have you held office or served on committees of state or regional professional organizations?	1	2
i. Have you been the editor of a journal in your field or served as a member of a professional journal editorial board?	1	2
j. Have you refereed contributed articles for a professional journal in your field in the last two years?	1	2
k. Do you have an institutional or department grant to support your research this year?	1	2
l. Do you have a grant or contract with an agency outside the university to support your research this year?	1	2

9. Please list the number of your publications in each of the following areas for: (a) your entire professional career and (b) the last three years. Include items written alone or in collaboration with others.

	(a) Entire career	(b) Last three years
Professional articles and single chapters in books		
Scholarly book reviews		
Authored books		
Edited books or anthologies		
Monographs and manuals		

10. About how many days in the past 12 months were you away from campus for professional activities (e.g., professional meetings, speeches, consulting)?

____

11. How many times in the past 12 months have you presented some of your research results or other scholarly material as a colloquium speaker, visiting lecturer on another campus, speaker at a professional meeting, etc.?

____

12. What is your present academic rank?

( ) Do not hold rank designation
( ) Professor
( ) Associate professor
( ) Assistant professor
( ) Lecturer or Instructor
( ) Other____________________

13. What is your highest earned degree?

( ) Ph.D.
( ) Other doctorate (Ed.D., D.A., M.D., etc.)
( ) Masters or equivalent
( ) Other

14. In what year did you receive your highest earned degree?

____

15. From what university did you receive your highest earned degree?

Name:__________________________

State:__________________________

16. What is your present university appointment?
    ( ) Full time
    ( ) Part time
    ( ) Adjunct

17. Do you have tenure at this university?
    ( ) Yes
    ( ) No

18. How many years have you been associated with this department?

    ____

19. Do you hold a joint appointment with another department?
    ( ) Yes
    ( ) No

20. Do you hold a joint appointment with a center or institute?
    ( ) Yes
    ( ) No

21. How many years of university teaching experience have you had?

    ____

22. What is your sex?
    ( ) Male
    ( ) Female

23. In what university are you currently teaching?

    ____

24. Indicate (a) your discipline and (b) the one sub-specialization with which you identify most closely.

    (a) Discipline
    (b) Specialization (b)

    ( ) CHEMISTRY
        ( ) Analytical
        ( ) Biochemical
        ( ) Inorganic
        ( ) Organic
        ( ) Physical
        ( ) Other

    ( ) HISTORY
        ( ) Ancient
        ( ) Medieval
        ( ) Modern
        ( ) American
        ( ) Third-world
        ( ) Other

    ( ) PSYCHOLOGY
        ( ) Educational
        ( ) Measurement
        ( ) Personality
        ( ) Developmental
        ( ) Experimental
        ( ) Organizational
        ( ) Clinical
        ( ) Social
        ( ) Other

25. For each university listed below, rate the doctoral programs in your field (discipline) on the following questions. Your ratings will be used only in research associated with this project; summary ratings will not be made public.

Question A: Quality of Graduate Faculty. Circle the number below the term that corresponds most closely to your judgment of the quality of the graduate faculty in your field at each institution listed. Consider only the scholarly competence and achievements of the present faculty.

Question B: Attractiveness of the Doctoral Program. Circle the number below the term that corresponds most closely to the way you would rate the institutions listed if you were selecting a graduate school at which to work for a doctorate today. Take into account the accessibility of the faculty and its scholarly competence, the curricula, the instructional and research facilities, the quality of graduate students, and other factors that contribute to the effectiveness of the doctoral program.

INSTITUTIONS (A sample of universities awarding doctorates in your field, arranged alphabetically)	QUESTION A QUALITY OF GRADUATE FACULTY							QUESTION B ATTRACTIVENESS OF DOCTORAL PROGRAM				
	Distinguished	Strong	Good	Adequate	Marginal	Not sufficient for doctoral training	Insufficient information	Extremely attractive	Attractive	Acceptable	Not attractive	Insufficient information
Boston College	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Berkeley, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Davis, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Los Angeles, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Colorado, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Emory U.	1	2	3	4	5	6	7	1	2	3	4	5
Florida State U. (Tallahassee)	1	2	3	4	5	6	7	1	2	3	4	5
Indiana U. (Bloomington)	1	2	3	4	5	6	7	1	2	3	4	5
Iowa, U. of (Iowa City)	1	2	3	4	5	6	7	1	2	3	4	5
Kansas, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Louisiana State U. (Baton Rouge)	1	2	3	4	5	6	7	1	2	3	4	5
Maryland, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Michigan, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Minnesota, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Missouri, U. of (Columbia)	1	2	3	4	5	6	7	1	2	3	4	5
New York U.	1	2	3	4	5	6	7	1	2	3	4	5
Northwestern U.	1	2	3	4	5	6	7	1	2	3	4	5
Oklahoma State U. (Stillwater)	1	2	3	4	5	6	7	1	2	3	4	5
Pennsylvania, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Princeton U.	1	2	3	4	5	6	7	1	2	3	4	5
Stanford U.	1	2	3	4	5	6	7	1	2	3	4	5
Toledo, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Utah, U. of	1	2	3	4	5	6	7	1	2	3	4	5
West Virginia U.	1	2	3	4	5	6	7	1	2	3	4	5
Wisconsin, U. of (Madison)	1	2	3	4	5	6	7	1	2	3	4	5

26. On this page, rate each university's doctoral program in the area of specialization that you indicated in item 24 (b).

Question A: Quality of Graduate Faculty. Circle the number below the term that corresponds most closely to your judgment of the quality of the graduate faculty in your specialization at each institution listed. Consider only the scholarly competence and achievements of the present faculty.

Question B: Attractiveness of the Doctoral Program. Circle the number below the term that corresponds most closely to the way you would rate the institutions listed if you were selecting a graduate school at which to work for a doctorate today. Take into account the accessibility of the faculty and its scholarly competence, the curriculum, the instructional and research facilities, the quality of graduate students, and other factors that contribute to the effectiveness of the doctoral program in your specialization.

INSTITUTIONS (A sample of universities awarding doctorates in your field, arranged alphabetically)	QUESTION A QUALITY OF GRADUATE FACULTY							QUESTION B ATTRACTIVENESS OF DOCTORAL PROGRAM				
	Distinguished	Strong	Good	Adequate	Marginal	Not sufficient for doctoral training	Insufficient information	Extremely attractive	Attractive	Acceptable	Not attractive	Insufficient information
Boston College	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Berkeley, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Davis, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Los Angeles, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Colorado, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Emory U.	1	2	3	4	5	6	7	1	2	3	4	5
Florida State U. (Tallahassee)	1	2	3	4	5	6	7	1	2	3	4	5
Indiana U. (Bloomington)	1	2	3	4	5	6	7	1	2	3	4	5
Iowa, U. of (Iowa City)	1	2	3	4	5	6	7	1	2	3	4	5
Kansas, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Louisiana State U. (Baton Rouge)	1	2	3	4	5	6	7	1	2	3	4	5
Maryland, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Michigan, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Minnesota, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Missouri, U. of (Columbia)	1	2	3	4	5	6	7	1	2	3	4	5
New York U.	1	2	3	4	5	6	7	1	2	3	4	5
Northwestern U.	1	2	3	4	5	6	7	1	2	3	4	5
Oklahoma State U. (Stillwater)	1	2	3	4	5	6	7	1	2	3	4	5
Pennsylvania, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Princeton U.	1	2	3	4	5	6	7	1	2	3	4	5
Stanford U.	1	2	3	4	5	6	7	1	2	3	4	5
Toledo, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Utah, U. of	1	2	3	4	5	6	7	1	2	3	4	5
West Virginia U.	1	2	3	4	5	6	7	1	2	3	4	5
Wisconsin, U. of (Madison)	1	2	3	4	5	6	7	1	2	3	4	5

27. Please use this space for any comments you would like to make about the educational quality of doctoral programs in your department or issues concerned with the assessment of quality in doctoral education. Your reactions to this questionnaire as a means of systematically collecting the opinions of faculty members about their programs are also welcome. Thank you for completing the questionnaire.

Please seal your completed questionnaire in the accompanying envelope, put your name on the outside of the envelope, and return it to your department office (or follow other instructions that may accompany the questionnaire when it is distributed). There is no name on the questionnaire; we ask for your name on the envelope only so that we can tell who has completed the form and who has not. The questionnaires will be removed and the envelopes discarded after they have been returned to the researchers.

THE COUNCIL OF
GRADUATE SCHOOLS
IN THE UNITED STATES

CGS

One Dupont Circle, N.W., Washington, D. C. 20036 • Phone: Area Code 202: 223-3791

J. BOYD PAGE
President

June, 1975

Dear Graduate School Alumnus:

We need your help in a major national research effort to develop better ways of describing university programs of doctoral study. Sponsored by the Council of Graduate Schools with funds from the National Science Foundation, the project is collecting information from faculty members, doctoral students, and department alumni in three departments at 20 randomly selected universities across the country. Your former department is one of those chosen for participation in the field study.

The questionnaire on the following pages will take about a half-hour of your time to complete. An envelope is provided to insure the confidentiality of your responses; your completed questionnaire will be seen only by the research staff, and summaries of the information will not identify universities by name in any report of the project. However, your former department will receive a summary of responses made by its doctoral students, graduate faculty members, and alumni that can be used for self-study and program improvement.

The purpose of this project is to identify and measure a variety of characteristics of doctoral programs that are related to the achievement of educational excellence. In addition to the usefulness of such measures for program review, they would improve information available for the guidance of prospective graduate students.

We think you will find the questionnaire interesting to answer and invite your comments on the items as well as your experiences in this program.

The accuracy of the research findings, and of the summary report that will be returned to your department, is dependent on your candid response to the following questions. We believe the importance of the study will justify the time you give it. Please complete the questionnaire and return it while you have it at hand.

On behalf of the Council of Graduate Schools, I thank you for your cooperation.

Sincerely,

J. B. Page

J. Boyd Page
President

Please print: Your name ______________________________ University which awarded you your doctorate ______________________ Field ____________________

CGS GRADUATE ALUMNI QUESTIONNAIRE

1. To what extent do you agree with the following statements about the department in which you did your doctoral study and its doctoral programs of study? Please give your opinion based on your best recollection of your graduate school experiences. (Circle one number on each line.)

	Disagree strongly (1)	Disagree with reservations (2)	Agree with reservations (3)	Agree strongly (4)
a. A single "school of thought" or scholarly viewpoint dominated the department..	1	2	3	4
b. It was fairly common for students in the department to get the feeling that they were being used or exploited by members of the faculty..	1	2	3	4
c. I consider the graduate program one of the best in the field..	1	2	3	4
d. The department had a humane environment characterized by mutual respect and concern between students and professors..	1	2	3	4
e. Departmental practices created a lot of tension in students.	1	2	3	4
f. I would advise a friend with similar interests to study in this department..	1	2	3	4
g. There were many opportunities to take courses in other programs and fields.	1	2	3	4
h. I learned a great deal as a student in this department..	1	2	3	4
i. Faculty members emphasized ways in which knowledge and skills in the field could be used to solve social problems and improve society.	1	2	3	4
j. Competition among students was encouraged in the department.	1	2	3	4
k. Students supported and helped each other meet the academic demands of the program..	1	2	3	4
l. The department was a stimulating and exciting place to study..	1	2	3	4

How would you rate your former department's faculty and programs? If an item listed below doesn't apply to your field, or if you feel you cannot respond, skip the item. (Circle one number on each line.)

2. Characteristics of the Graduate Faculty	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Accessibility to students	1	2	3	4
b. Useful criticism of your work	1	2	3	4
c. Concern for your professional development	1	2	3	4
d. Guidance in the selection of courses	1	2	3	4

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Characteristics of the Graduate Faculty (continued)

	Poor (1)	Fair (2)	Good (3)	Excellent (4)
e. Helpfulness in dealing with classwork	1	2	3	4
f. Knowledge of the field	1	2	3	4
g. Scholarship or research excellence	1	2	3	4
h. Enthusiasm for the field	1	2	3	4
i. Overall quality of teaching	1	2	3	4
j. Interest in graduate students' welfare, including their personal problems	1	2	3	4

3. Degree Requirements and Curriculum

	Poor (1)	Fair (2)	Good (3)	Excellent (4)
a. Clarity of stated requirements for the degree	1	2	3	4
b. Agreement between degree requirements and the stated objectives of the department	1	2	3	4
c. Relevance of courses in related fields to meet degree requirements	1	2	3	4
d. Appropriateness of language requirements	1	2	3	4
e. Opportunities for independent study	1	2	3	4
f. Flexibility of program requirements to meet individual needs	1	2	3	4
g. Logical structure or sequence of courses	1	2	3	4
h. Fairness with which qualifying examinations (or equivalent) were conducted and evaluated	1	2	3	4
i. Breadth of course and program offerings	1	2	3	4
j. Depth of course and program offerings	1	2	3	4
k. Relations with related departments in the university	1	2	3	4

4. Overall, how well do you think your department prepared you for work in each of the following areas? (Circle one number on each line.)

	Not very well	Fairly well	Extremely well
a. Scholarly research	1	2	3
b. College teaching	1	2	3
c. Other professional practice (e.g., clinician, curator, product manager, etc.)	1	2	3

5. Please evaluate the following components of the dissertation phase of the doctoral program in your department according to the scale at the right. (Circle one number on each line.)

	Needs substantial revision (1)	Could be improved (2)	Satisfactory as is (3)
a. Integration of dissertation research and course work	1	2	3
b. Procedures for selecting the chairman and committee members	1	2	3
c. Freedom of student to select own topic	1	2	3
d. Generally expected scope of research problem	1	2	3
e. Formal and informal arrangements for student/faculty interaction	1	2	3
f. The nature of the supervisory relationship between chairman, committee and candidate	1	2	3
g. The nature and timing of the final oral examination	1	2	3
h. Quality of writing expected in the final document	1	2	3
i. Opportunity for the student's creative thinking and individual expression	1	2	3
j. Relevance of dissertation research to other professional skills	1	2	3
k. Relevance of dissertation research to student's career plans	1	2	3

6. As you look back to your graduate school years, and considering your present position, how valuable or useful were the following aspects of your graduate experience as preparation for your present work? If a particular experience is not applicable to you, circle the number in column 5. (Circle one number on each line.)

	Very little value (1)	Some value (2)	Considerable value (3)	Very great value (4)	Not applicable (5)
a. Required courses in department	1	2	3	4	5
b. Elective courses in department	1	2	3	4	5
c. Course work in other departments	1	2	3	4	5
d. Association with your major professor	1	2	3	4	5
e. Association with other professors	1	2	3	4	5
f. Association with fellow graduate students	1	2	3	4	5
g. Experience of working on your dissertation	1	2	3	4	5
h. The department's standards of excellence for work in the field	1	2	3	4	5
i. The cultural and social life of the university	1	2	3	4	5
j. Technical skills learned in course or research work	1	2	3	4	5
k. Knowledge gained in course or research work	1	2	3	4	5
l. Experience as a research assistant	1	2	3	4	5
m. Experience as a teaching assistant	1	2	3	4	5

To be able to analyze our results as meaningfully as possible, we would like to know a few things about you. Please check one response or fill in the blank for each of the following items.

7. What is your sex?

( ) Male ( ) Female

8. What is your age? ____________

9. Are you a United States citizen?

( ) Yes ( ) No

10. How do you describe yourself?

( ) American Indian or Native American
( ) Black, Afro-American or Negro
( ) Mexican-American or Chicano
( ) Oriental or Asian-American
( ) Puerto Rican or Spanish-speaking American
( ) White or Caucasian
( ) Other

11. Approximately what overall grade average did you receive in undergraduate school, and what grades did you receive in graduate study? (Important: If your college did not use letter grades--A, B, C, etc.--please mark the letter grade that is the closest equivalent to your grade average. Circle one number in each column.)

	Undergraduate grades ↓	Graduate grades ↓
C or lower (2.49 or below)	1	1
C+ (2.50 - 2.99)	2	2
B (3.00 - 3.24)	3	3
B+ (3.25 - 3.49)	4	4
A to A+ (3.50 - 3.99)	5	5
All A's (4.00)	6	6
No grades	7	7

12. In what year did you receive your doctorate?

____

13. Indicate (a) your field of graduate study and (b) the one sub-specialization with which you identify most closely.

(a) Field ↓

(b) Specialization (b) ↓

( ) CHEMISTRY
  ( ) Analytical ( ) Organic
  ( ) Biochemical ( ) Physical
  ( ) Inorganic ( ) Other

( ) HISTORY
  ( ) Ancient ( ) American
  ( ) Medieval ( ) Third-world
  ( ) Modern ( ) Other

( ) PSYCHOLOGY
  ( ) Educational ( ) Clinical
  ( ) Measurement ( ) Social
  ( ) Personality ( ) Other
  ( ) Developmental
  ( ) Experimental
  ( ) Organizational

14. How helpful were each of the following in finding a job for you when you completed doctoral study? (Circle one number on each line.)

	Not at all helpful (1) ↓	Of some help (2) ↓	Very helpful (3) ↓
My department's formal or informal efforts	1	2	3
The assistance of individual professors . .	1	2	3
The university placement office	1	2	3
Openings listed with professional association	1	2	3
Letters sent directly to prospective employers . .	1	2	3

15. How would you describe the first position you held after completing all requirements for your doctorate, and how would you describe your current position? If more than one statement describes the position, mark the one that was most time consuming.

First position	Current position	
( )	( )	Postdoctoral fellowship
( )	( )	Regular academic appointment at a PhD-granting university
( )	( )	Regular academic appointment at a four-year college or non-PhD-granting university
( )	( )	Lecturer or adjunct faculty appointment at a four-year college or university
( )	( )	Administrative position at a four-year college or university
( )	( )	Community college position
( )	( )	Primary or secondary school position
( )	( )	Research position with academic or other nonprofit agency
( )	( )	Research position in business, industry, or government
( )	( )	Administrative position in business, industry, or government
( )	( )	Professional practice in a clinic, agency or hospital
( )	( )	Self-employed or private practice
( )	( )	Continuing graduate or professional education
( )	( )	Not employed for pay
( )	( )	Other position (specify):______ ______________________________

16. Which statement best describes how you regarded your first job after leaving graduate school, at the time you accepted it? (Mark one.)

( ) Job to earn money while I looked for something else

( ) Job with possible career potential

( ) Job with definite career potential

17. Please rate each of the following statements for the accuracy with which they describe your current position. (Circle one number on each line.)

	Not descriptive (1)	Descriptive, with reservations (2)	Very descriptive (3)
a. It provides a very comfortable salary	1	2	3
b. It provides many opportunities for research and creative work	1	2	3
c. It does not use all my education and skills	1	2	3
d. It is a very secure job . .	1	2	3
e. It provides good opportunities for advancement . .	1	2	3
f. It allows me to increase my visibility within the profession	1	2	3
g. It interferes with the preparation of articles and/or books	1	2	3
h. My colleagues are first-rate scholars or researchers . .	1	2	3
i. It leaves me relatively free of supervision by others . .	1	2	3
j. It gives me a chance to exercise leadership	1	2	3
k. It provides many opportunities to be helpful to others	1	2	3
l. Most days I enjoy it	1	2	3
m. It gives me a feeling of worthwhile accomplishment .	1	2	3

18. What is your primary activity in your present job? (Check one.)

( ) Research

( ) Research and teaching

( ) Teaching

( ) Administration

( ) Other professional practice in the field

( ) Other

19. Is your present position:

( ) Full time

( ) Part time

20. If you hold an academic position, what is your present academic rank?

( ) Do not hold rank designation

( ) Professor

( ) Associate professor

( ) Assistant professor

( ) Lecturer or Instructor

( ) Other ____________________

21. If you hold an academic position, how would you describe your prospects for tenure?

( ) Very good

( ) Good

( ) Unsure

( ) Poor

( ) Very poor

22. Since completing your dissertation, have you done subsequent research in the same area as that of your dissertation? ( ) Yes ( ) No

23. Have you published any part of your dissertation? ( ) Yes ( ) No

24. To what extent is your job related to your graduate field of study?

( ) Not at all related

( ) Somewhat related

( ) Highly related

25. Do you consider yourself underemployed in your present position because it is not in your field or not consistent with your level of training and experience?

( ) Yes

( ) No

26. What is your approximate annual income from employment and related professional activities (e.g., honoraria, royalties)? Include salary before deductions but without fringe benefits paid by the employer. (Check one.)

( ) Less than $10,000

( ) $10,000 - $14,999

( ) $15,000 - $19,999

( ) $20,000 - $24,999

( ) $25,000 - $29,999

( ) $30,000 - or above

27. Please list the number of your publications or presentations in each of the following areas. Include items prepared alone or in collaboration with others.

Publications	Number
Professional articles and single chapters in books	_____
Scholarly book reviews	_____
Authored books	_____
Edited books or anthologies	_____
Monographs and manuals	_____
Presentations	
At regional or national professional meetings	_____
At scholarly colloquia at own or other institution	_____

28. Did you ever take the Graduate Record Examinations?

( ) Yes ( ) No

29. If yes, would you be willing to release your scores for research purposes?

( ) Yes ( ) No

30. If yes, what is your best recollection of the month and year when you last took the test?

Month _______ Year _______

We invite your additional comments about your former department as a place for doctoral study. Your reactions to this questionnaire as a means of systematically collecting the opinions of graduate school alumni about their programs are also welcome.

Please seal your completed questionnaire in the accompanying envelope and drop it in the mail. Thank you for completing the questionnaire.

DEPARTMENTAL PROFILE

Dept.:______________________

College:______________________

Univ.:______________________

Person completing this report:

____

Note: Circled items were evaluated as program indicators for use in this report.

The following questions are designed to provide an overview of your doctoral programs. Unless specified otherwise, the questions refer only to doctoral-level training and research, not undergraduate or master's degree programs. Please write in the appropriate numbers for each question in the spaces provided, and add comments at the end of the form to explain unique or unusual aspects of your program that should be taken into consideration when interpreting the data.

1. FACULTY STAFFING

a. What was the total number of faculty members (instructor through professor) in your department in Fall 1974, to teach graduate and undergraduate students?

_____Full time _____Part time _____FTE*

b. What is the 1974-75 average full-time salary for each faculty rank, not including fringe benefits, for a 9- or 10-month appointment?

_________Professor _________Instructor

_________Associate professor _________All faculty

_________Assistant professor

c. How many full-time faculty have left your department since July, 1973?__________

d. How many new full-time faculty appointments have been made since July, 1973?

____

e. How many of your faculty members reported in (a), above, teach or supervise doctoral students?

_________Full time _________Part time _________FTE*

f. How many of the faculty members who teach or supervise doctoral students (e, above) are tenured?

_________Full time _________Part time

g. How many of the faculty members who teach or supervise doctoral students (e, above) are chairman of one or more dissertation committees?

_________Full time _________Part time

---

*In this report, FTE is defined as the sum of full time plus the full-time equivalent of part-time faculty members or students.

h. How many of the faculty members who teach or supervise doctoral students (e, above) have earned doctorates?

__________Full time __________Part time

i. How many of the faculty members who teach or supervise doctoral students have earned doctorates from departments in your field at leading institutions according to "Quality of Graduate Faculty" ratings in the ACE Roose-Andersen report? (See lists at the end of this form.)

__________Full time __________Part time

FACULTY RESEARCH ACTIVITY

2. How many faculty members who teach or supervise doctoral students are currently funded at least in part by a research, project, or training grant or contract from some agency outside the university?

__________Full time __________Part time

3. What is the total number of professional books and journal articles by members of your faculty (alone or in collaboration) published in the last three years (since July, 1972)?

__________Books __________Journal articles

4. For each of the last three years, how many research proposals by faculty members in your department have been submitted and have been funded: (1) internally (department or university; and (2) externally (government, foundation, or other outside source)? (Count proposals submitted to more than one agency or source only once.)

	1972-73 Source of Funds		1973-74 Source of Funds		1974-75 Source of Funds	
	Internal	External	Internal	External	Internal	External
a. Number of proposals submitted						
b. Total dollars of proposals submitted (direct costs)						
c. Number of proposals funded						
d. Total dollars of projects funded (direct costs)						
e. Actual dollars available to the department each year for research (include university "seed money," continuing projects funded in earlier years, and endowment funds for research)						

DEPARTMENTAL SIZE

5. Fall semester staff and enrollment data for 1972-1974; number of degrees granted and financial data for each of the last three years.

	Fall 1972	Fall 1973	Fall 1974
a. FTE* faculty (instructors through professors)			
b. FTE* instructional support staff (administrative, office, technical, etc.)			
c. FTE* undergraduate departmental majors			
d. FTE* terminal master's students			
[✓ e.] FTE* doctoral students			

	July 1972-June 1973	July 1973-June 1974	July 1974-June 1975
f. Baccalaureate degrees awarded			
g. Master's degrees awarded			
[✓ h.] Doctor's degrees awarded			
i. Department's total dollar education and general expense budget for each year, including gifts and other funds from outside the university but not including student financial aid, assistantships, or research funds**			
[✓ j.] The approximate dollar amount of (i) that was used to support the department's doctoral program(s), not including student financial aid, assistantships, or research funds			
k. Dollars in (j) from sources outside the university (e.g., gifts, training grant support for faculty, etc., but not financial aid for students or research grants)			

**Please check the items in the following list that are included in your education and general expense budget figure.

______Instructional salaries
______Support staff salaries
______Fringe benefits
______Supplies
______Equipment, furnishings, and shop expenses
______Travel
______Student recruitment
______Consultants
______Library acquisitions
______Computer time
______Janitorial services
______Summer school
______Other (please specify):______

*Total of full time plus full-time equivalent of part time.

6. ENROLLMENTS AND DEGREES BY AREA OF SPECIALIZATION. Complete only the section for your field. Include each student and degree only once; base average time to degree on the number of years since beginning doctoral study (or entering your program) by those to whom you awarded doctoral degrees in the last three years.

	Fall 1974 faculty to teach doctoral students		Fall 1974 doctoral student enrollment		Doctoral degrees awarded	Average number of years students take to obtain degree
	Full time	Part time	Full time	Part time	July 1973-June 1974	
CHEMISTRY						
Analytical						
Biochemical						
Inorganic						
Organic						
Physical						
Other						
Total						
HISTORY						
Ancient						
Medieval						
Modern						
American						
Third-world						
Other						
Total						
PSYCHOLOGY						
Clinical						
Educational						
Experimental						
Developmental						
Measurement						
Organizational						
Personality						
Social						
Other						
Total						

7. How many of the doctoral students in your department this year are foreign nationals?

_________Full time _________Part time

8. How many persons who received a doctor's degree from your department in 1973-1974 had published a professional article, monograph, or book prior to receiving the degree? __________

9. Based on your experience in the last few years, what percentage of entering doctoral students eventually complete the degree? __________

10. ADMISSIONS DATA (Three years)

	Fall 1972	Fall 1973	Fall 1974
[✓ a.] How many students applied for admission to your doctoral program(s) in each of the last three years?			
[✓ b.] How many of these applicants were offered admission?			
[✓ c.] How many of these admitted students actually enrolled (registered)?			
d. What was the average undergraduate grade point average of the newly enrolled doctoral students? (A = 4.0)			
What were the average test scores of the newly enrolled doctoral students? (Include number of individual scores included in each average in parentheses following the score.)			
[✓ e.] GRE Verbal			
[✓ f.] GRE Quantitative			
[✓ g.] GRE advanced test in your field			
h. Miller Analogies Test			
i. How many of your newly enrolled doctoral students had already completed a master's degree?			
j. How many of your newly enrolled doctoral students were U. S. citizens from outside your state?			

11. FINANCIAL SUPPORT FOR STUDENTS

a. How many doctoral students held an assistantship in the department in each of the following categories during fall semester 1974?

_______Teaching _______Research _______Other

b. What was the total number of doctoral students in your department who received some form of financial assistance during the fall semester 1974 (fellowship, grant, tuition remission, assistantship, etc.)? Count each student only once. Include students who received fellowship or traineeship grants from non-university sources, but do not include loans unless they were part of a university financial aid package.

__________ Full-time students   __________ Part-time students

c. What is the total dollar amount of university funds to your department for assistantships or other work-related doctoral student support in 1974-75?

____

d. What is the total dollar amount of university funds to your department for non-work-related doctoral student support in 1974-75 (fellowships, grants, tuition remission, etc.)? __________

e. What is the total dollar amount of non-university fellowships, grants, and traineeships to doctoral students in your department during 1974-75? __________

12. EMPLOYMENT

What have been the first jobs of doctoral degree recipients from your department in the last two years? Count primary appointments if more than one job. The total number reported for each year should equal the number of doctor's degrees awarded as reported in 5(h).

	Number of Doctoral Degree Recipients	
	1972-73	1973-74
Postdoctoral fellowship		
Regular academic appointment at a PhD-granting university		
Regular academic appointment at a four-year college or non-PhD-granting university		
Lecturer or adjunct faculty appointment at a four-year college or university		
Administrative position at a four-year college or university		
Researcher with academic or other nonprofit agency		
Community college position		
Primary or secondary school position		
Research or administration in business, industry, or government		
Professional practice in a clinic, agency, or hospital		
Self-employed or private practice		
Other position		
Continuing graduate or professional education		
Seeking employment at last contact		
Unknown		
Total		
How many of these first jobs were directly related to the graduate's field of specialization?		

Please add here any notes or comments that would assist in the interpretation of data provided on the previous pages. Copies of recent departmental self-studies, reports on issues such as admissions or the placement of graduates, and statements of procedures used to arrive at departmental statistics would also be appreciated.

Please return this form to your graduate dean or campus coordinator for the CGS Dimensions of Quality project, who will forward it to the project researchers.

Tables are taken from Kenneth D. Roose and Charles J. Andersen's, A Rating of Graduate Programs, Washington, D. C.: American Council on Education, 1970, pp. 62, 66, 92.

CHEMISTRY — Physical Sciences

Leading Institutions, by Rated Quality of Graduate Faculty

Rankings			
1957	1964	1969	Institution
1	1	1	Harvard
‡	2*	2	Cal. Tech.
2	2*	3*	California, Berkeley
15	5	3*	Stanford
‡	4	5	M.I.T.
3	6	6	Illinois
10	9*	7	California, Los Angeles
4	9*	8*	Chicago
8	7*	8*	Columbia
7	11*	8*	Cornell
5	7*	8*	Wisconsin
6	11*	12	Yale
11	13	13	Princeton
12*	14*	14	Northwestern
‡	18*	15*	Iowa State (Ames)
‡	18*	15*	Purdue
‡	‡	17*	*California, San Diego*
16	16*	17*	Ohio State
‡	23*	17*	Texas
‡	20*	20*	Indiana
14	19	20*	Michigan
9	14*	20*	Minnesota
‡	‡	23	*Rockefeller*
‡	23*	24*	Florida State
‡	20*	24*	Johns Hopkins
‡	‡	24*	Michigan State †
‡	23*	24*	Penn State
‡	23*	24*	Rice
12*	20*	24*	Washington (Seattle)
‡	‡	30*	Brandeis †
‡	‡	30*	Carnegie-Mellon † *
‡	‡	30*	Case Western Reserve † *
‡	‡	30*	Colorado †
‡	‡	30*	Oregon †
‡	28	35*	Brown
‡	‡	35*	Florida †
‡	‡	35*	Notre Dame †
‡	‡	35*	Rochester †

HISTORY — Social Sciences

Leading Institutions, by Rated Quality of Graduate Faculty

Rankings			
1957	1964	1969	Institution
1	1	1*	Harvard
3	3	1*	Yale
4	2	3	California, Berkeley
6	6	4	Princeton
2	4*	5*	Columbia
15	7*	5*	Stanford
5	4*	5*	Wisconsin
7	7*	8*	Chicago
12	9*	8*	Michigan
8	9*	10	Cornell
9	11	11	Johns Hopkins
‡	12	12	California, Los Angeles
‡	16*	13*	Indiana
11	13*	13*	Northwestern
10	13*	13*	Pennsylvania
‡	19	16	North Carolina
‡	‡	17*	Brandeis †
‡	‡	17*	Brown †
‡	16*	17*	Duke
13	13*	17*	Illinois
‡	20	17*	Washington (Seattle)
14	16*	22	Minnesota
‡	‡	23*	Texas †
‡	‡	23*	Virginia †
‡	‡	25	Rochester †

PSYCHOLOGY — Social Sciences

Leading Institutions, by Rated Quality of Graduate Faculty

Rankings			
1957	1964	1969	Institution
5	1*	1	Stanford
2	3*	2	Michigan
4	3*	3	California, Berkeley
1	1*	4	Harvard
7	6	5	Illinois
‡	11*	6	Pennsylvania
6	7*	7*	Minnesota
9	7*	7*	Wisconsin
3	3*	7*	Yale
‡	11*	10	California, Los Angeles
‡	‡	11	Texas †
‡	9*	12*	Brown
‡	‡	12*	*M.I.T.*
‡	‡	14*	Colorado †
12	11*	14*	Indiana
10	15*	16*	Chicago
15	15*	16*	Johns Hopkins
‡	15*	16*	Northwestern
‡	‡	16*	Penn State †
14	18*	20*	Cornell
8	9*	20*	Iowa (Iowa City)
‡	22*	20*	Michigan State
‡	‡	20*	Rochester †
‡	18*	24*	Duke
‡	22*	24*	North Carolina
‡	‡	24*	Oregon †
11	14	27*	Columbia
‡	21	27*	Princeton
‡	‡	27*	Washington (Seattle) †
‡	‡	30*	Carnegie-Mellon † *
‡	‡	30*	N.Y.U.
13	20	30*	Ohio State

Departmental Chairman Questionnaire

Council of Graduate Schools Project on Dimensions of Quality in Doctoral Education

Dear Chairman:

Four kinds of information are sought on this form:

1. Reports of current departmental practices in selected areas,
2. Reports of recent changes experienced by the department and your judgments about their effect on the program's educational quality,
3. Your ratings of doctoral programs at a sample of universities,
4. Report and evaluation of departmental data collection for this study.

When you have completed the form, please mail it directly to Dr. Mary Jo Clark, Project Research Director, Educational Testing Service, Princeton, New Jersey, 08540.

Your name ______________________ Date ______________

University ______________________ Department ______________

1. Current departmental practices. Please indicate whether or not the following practices are characteristic of your department, by circling one number on each line.

	No (1) ↓	Yes (2) ↓
a. There is a departmental faculty committee to monitor and review the doctoral program curriculum.	1	2
b. The department offers joint doctoral degree programs with related departments.	1	2
c. The department offers interinstitutional or consortia programs at the doctoral level.	1	2
d. There is a course or other systematic training program on college teaching for prospective or current teaching assistants.	1	2
e. The department provides specific training for careers other than teaching or research.	1	2
f. There are regular departmental procedures for the evaluation of courses and instructors by doctoral students.	1	2
g. The department maintains placement files (recommendations, vitae, etc.) for its graduates.	1	2
h. There is a departmental faculty committee to work on job placement of graduates.	1	2

How frequently do the following practices occur in your department?

		Never (1)	Sometimes (2)	Often (3)	Always (4)
i.	Faculty or experienced student "mentors" are assigned to work with new teaching assistants	1	2	3	4
j.	Faculty regularly visit classes being taught by teaching assistants	1	2	3	4
k.	Supervised field placements are arranged for students who want to prepare for careers other than teaching or research as part of the doctoral program	1	2	3	4
l.	Individual professors obtain course evaluations from their doctoral students	1	2	3	4
m.	Students carry out independent research projects prior to reaching the dissertation stage	1	2	3	4
n.	A faculty member outside the department is appointed to a dissertation committee	1	2	3	4
o.	The dissertation committee plays an active role in the supervision of a student's graduate program	1	2	3	4
p.	Dissertation chairmen actively help their students locate appropriate positions upon completion of the degree	1	2	3	4
q.	The department encourages students and graduates to register with the university placement service	1	2	3	4
r.	Most doctoral students attend colloquia by departmental faculty members or visiting scholars	1	2	3	4
s.	Most faculty attend colloquia by departmental faculty members or visiting scholars	1	2	3	4

2. Recent Changes. The left hand column below lists a number of changing conditions that have been experienced by some graduate departments in the past few years. First, indicate whether each condition has or has not occurred in your doctoral program in the last three years. Next, if it has occurred, give your judgment of its effect on the academic excellence of the program.

	Occurred in this doctoral program in last 3 years		If yes, effect so far on program's academic excellence			
	No (1)	Yes (2)	Serious damage (1)	Some damage (2)	No effect (3)	Improvement (4)
a. Decline in number of applicants for admission	1	2	1	2	3	4
b. Decline in number of new students admitted each year	1	2	1	2	3	4
c. Increase in number of dropouts and ABD's	1	2	1	2	3	4
d. Decline in university funds for student support	1	2	1	2	3	4
e. Decline in external fellowship and traineeship funds	1	2	1	2	3	4
f. Decline in sponsored research funds	1	2	1	2	3	4
g. Decline in funds for support services and personnel	1	2	1	2	3	4
h. Decline in funds for supplies and equipment	1	2	1	2	3	4
i. Reduced number of faculty positions for the program	1	2	1	2	3	4
j. More difficulty placing new doctorates in appropriate academic positions	1	2	1	2	3	4
k. More difficulty placing new doctorates in appropriate nonacademic positions	1	2	1	2	3	4
l. Pressure to develop more programs designed specifically to train students for nonacademic careers	1	2	1	2	3	4
m. Pressure to hire minorities to meet affirmative action requirements	1	2	1	2	3	4
n. Pressure to hire women to meet affirmative action requirements	1	2	1	2	3	4
o. Pressure to admit minorities to meet equal educational opportunity requirements	1	2	1	2	3	4
p. Pressure to admit women to meet equal educational opportunity requirements	1	2	1	2	3	4
q. Inflation of undergraduate grade point averages among applicants for admission	1	2	1	2	3	4
r. Increase in the vocational orientation of students	1	2	1	2	3	4

3. For each university listed below, rate the doctoral programs in your field (discipline) on the following questions. Your ratings will be used only in research associated with this project; summary ratings will not be made public.

Question A: Quality of Graduate Faculty. Circle the number below the term that corresponds most closely to your judgment of the quality of the graduate faculty in your field at each institution listed. Consider only the scholarly competence and achievements of the present faculty.

Question B: Attractiveness of the Doctoral Program. Circle the number below the term that corresponds most closely to the way you would rate the institutions listed if you were selecting a graduate school at which to work for a doctorate today. Take into account the accessibility of the faculty and its scholarly competence, the curricula, the instructional and research facilities, the quality of graduate students, and other factors that contribute to the effectiveness of the doctoral program.

INSTITUTIONS (A sample of universities awarding doctorates in your field, arranged alphabetically)	QUESTION A							QUESTION B				
	QUALITY OF GRADUATE FACULTY							ATTRACTIVENESS OF DOCTORAL PROGRAM				
	Distinguished	Strong	Good	Adequate	Marginal	Not sufficient for doctoral training	Insufficient information	Extremely attractive	Attractive	Acceptable	Not attractive	Insufficient information
Boston College	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Berkeley, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Davis, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Cal. at Los Angeles, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Colorado, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Emory U.	1	2	3	4	5	6	7	1	2	3	4	5
Florida State U. (Tallahassee)	1	2	3	4	5	6	7	1	2	3	4	5
Indiana U. (Bloomington)	1	2	3	4	5	6	7	1	2	3	4	5
Iowa, U. of (Iowa City)	1	2	3	4	5	6	7	1	2	3	4	5
Kansas, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Louisiana State U. (Baton Rouge)	1	2	3	4	5	6	7	1	2	3	4	5
Maryland, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Michigan, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Minnesota, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Missouri, U. of (Columbia)	1	2	3	4	5	6	7	1	2	3	4	5
New York U.	1	2	3	4	5	6	7	1	2	3	4	5
Northwestern U.	1	2	3	4	5	6	7	1	2	3	4	5
Oklahoma State U. (Stillwater)	1	2	3	4	5	6	7	1	2	3	4	5
Pennsylvania, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Princeton U.	1	2	3	4	5	6	7	1	2	3	4	5
Stanford U.	1	2	3	4	5	6	7	1	2	3	4	5
Toledo, U. of	1	2	3	4	5	6	7	1	2	3	4	5
Utah, U. of	1	2	3	4	5	6	7	1	2	3	4	5
West Virginia U.	1	2	3	4	5	6	7	1	2	3	4	5
Wisconsin, U. of (Madison)	1	2	3	4	5	6	7	1	2	3	4	5

4. Report and evaluation of departmental data collection for this study.

We would like to know how departments handled the on-campus distribution of faculty and student questionnaires, and your evaluation of this procedure.

a. Who managed the distribution and collection of faculty and student questionnaires in your department? (Circle one letter in each column.)

	Faculty Quest.	Student Quest.
Department chairman	F	S
Faculty member	F	S
Departmental assistant	F	S
Secretary	F	S
Student	F	S
Dean's office	F	S
Other (specify) ________________	F	S

b. How were the questionnaires distributed? (Circle as many letters as apply.)

Campus mail	F	S
U.S. mail	F	S
Through classes	F	S
At a faculty meeting	F	S
At a meeting of students	F	S
Available to be picked up	F	S
Other (specify) ________________	F	S

c. Did you do a follow-up on non-respondents?

Yes	F	S
No	F	S

d. If you did a follow-up, what procedures did you use? (Circle as many letters as apply.)

Verbal reminder in classes and/or meetings	F	S
Memorandum reminder	F	S
Distribution of a second questionnaire	F	S
Personal contact	F	S
Other (specify) ________________	F	S

e. In general, how effective do you think the distribution and collection procedures were?

Very effective, everything went smoothly	F	S
Fairly effective, although we encountered a few problems	F	S
Not effective; there were a lot of problems	F	S
Not effective because we had a limited staff	F	S
and/or limited time	F	S

f. In general, what was the response of faculty members and students toward the research and the questionnaire? (Circle one letter in each column.)

Enthusiastic	F	S
Willing	F	S
Neutral	F	S
Reluctant	F	S
Resistant	F	S

g. How many faculty questionnaires did you distribute? __________

h. How many student questionnaires did you distribute? __________

One purpose of this project is to assess the feasibility of collecting a wide variety of data relevant to program quality. We would appreciate your comments and suggestions concerning the procedures and materials used in this study as well as any problems that have come to your attention.

Please comment on the unique, innovative, or outstanding aspects of your doctoral program (e.g., interinstitutional or consortia arrangements, curriculum design, preparing graduates for non-traditional employment opportunities, etc.).

Please comment on the particular needs or weaknesses of your doctoral program.

Thank you for completing this form and for your general interest in and support of this research.

APPENDIX E

Characteristics of Programs and Questionnaire Respondents

	Page
Characteristics of Programs in the Study	A97
Background of Faculty Respondents	A98
Background of Student Respondents	A99
Background of Alumni Respondents	A100

Table E.1

Characteristics of Programs
(Average of program reports)

	Chemistry (N=21)	History (N=23)	Psychology (N=21)
1. Number of FTE graduate faculty	25	28	29
2. Percentage of graduate faculty who are tenured	85	87	74
3. Percentage of graduate faculty who chair dissertation committees	84	73	75
4. Number of FTE doctoral students	98	102	119
5. Number of doctor's degrees awarded in a recent year	18	14	19
6. Ratio of doctors to baccalaureate degrees	.62	.11	.11
7. Mean salary--professors	24.5	23.1	23.4
8. Mean salary--all faculty	19.5	18.0	18.4
9. Percentage of graduate faculty with outside research grant	68	10	37
10. Outside dollars for research (in thousands)	841	48	468
11. Research dollars per faculty (in thousands)	31.0	1.8	14.2
12. Percentage of students with financial assistance	91	54	84
13. Total financial aid dollars per student (in thousands)	3.4	2.1	2.6
14. Percentage of faculty with degrees from "leading institutions"	84	91	72

Note: Averages for items 10 and 11 are based on returns from 16 chemistry departments, 12 history departments, and 13 psychology departments. Item 13 is based on 18, 19, and 18 responses respectively.

Table E.2

Background of Faculty Respondents
(Average of program percents)

	Chemistry	History	Psychology
1. Rank: Professor	53	54	43
Associate professor	29	30	28
2. Ph.D. as highest earned degree	99	96	99
3. Degree earned more than 10 years ago	65	51	50
4. Present appointment full time	99	99	98
5. Tenured appointment	81	78	71
6. Associated with this department more than 10 years	48	33	32
7. More than 10 years of university teaching experience	57	56	45
8. Joint appointment with another department	07	08	11
9. More than 50% of time with doctoral students	46	19	51
10. More than 10 days away from campus for professional activities in the past year	49	29	44
11. Three or more professional presentations in the past year	57	35	54
12. Outside research grant this year	67	19	43
13. Highest degrees from "leading institutions" (peer rating 3.0 or above)	87	86	73
14. Sex: male	98	92	86
15. Average hours per week in:			
a. teaching, class preparation, student evaluation	17	23	17
b. advising students and directing student research	13	7	10
c. research and scholarly writing	16	16	16
d. program and university administration	7	7	7
e. private practice	--	--	1
f. other professional activities	2	3	2
g. total professional activities	56	56	55

Table E.3

Background of Student Respondents
(Average of program percents)

		Chemistry	History	Psychology
1.	One year or less between undergraduate degree and graduate enrollment	68	46	72
2.	First enrolled in the program 1971 or earlier (4 years or more)	58	63	53
3.	Degree expected in 1975 or 1976	81	60	75
4.	Degree goal of Ph.D.	98	98	99
5.	Graduate study only at this university	75	50	72
6.	Currently enrolled full time	92	69	88
7.	Undergraduate grades: 3.50 or above	31	32	47
	3.00 -- 3.49	48	45	44
8.	Graduate grades 3.50 or above	55	82	80
9.	Currently research assistant	47	08	21
10.	Currently teaching assistant	37	33	28
11.	Sex: male	85	73	65
12.	Age: under 30	84	56	80
13.	U.S. citizen	82	95	93
14.	Race: Caucasian	79	87	90
	Black	--	04	03
	Oriental	10	02	02

Table E.4

Background of Alumni Respondents
(Average of program percents)

	Chemistry (N=20)	History (N=13)	Psychology (N=14)
1. Sex: male	90	88	74
2. Age: 30-34	66	49	59
3. U.S. citizen	92	96	97
4. Race: Caucasian	89	92	96
5. Undergraduate grades: 3.50 or above	26	33	35
3.00 -- 3.49	49	52	50
6. Graduate grades 3.50 or above	57	76	76
7. Doctorate awarded: 1970	26	27	24
1971	33	31	29
1972	32	33	40
8. Employed full time	98	94	91
9. Income $20,000 or over	36	11	40

APPENDIX F

Scales Formed from Individual Questionnaire Items

	Page
Student Scales	A103
Faculty Scales	A111
Alumni Scales	A117

Note: Estimates of scale reliability are intraclass correlations; coefficient alphas were computed to estimate scale homogeneity (Winer, 1971).

Faculty Scale No. 5

Rating of Student Communication Skills

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
4.42*	.77	.91

Item-item correlations of program mean scores	1	2	3	4
1. Present ideas in poorly organized way (reversed) (F-3-j)	--			
2. Have thought provoking classroom comments (F-3-l)	71	--		
3. Show imagination in presenting dull topic (F-3-m)	52	80	--	
4. Offer well-founded criticisms of others' work (F-3-o)	71	79	66	--
Item-scale score correlations of program mean scores	83	94	84	90

*p < .001 df = 72/1647

Student Scale No. 1

Environment for Learning

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
4.16*	.76	.73

Item-item correlations of program mean scores	1	2	3	4	5	6
1. Common for students to feel exploited (reversed) (S-1-g)	--					
2. Department has humane environment (S-1-i)	61	--				
3. Departmental practices create student tensions (reversed) (S-1-j)	45	68	--			
4. Competition among students encouraged (reversed) (S-1-p)	33	32	16	--		
5. Students support and help each other meet academic demands (S-1-q)	06	24	13	41	--	
6. Students friendly and supportive in personal lives (S-6-g)	02	25	05	18	77	--
Item-scale score correlations of program mean scores	66	82	67	62	61	52

*p < .001 df = 72/2025

Student Scale No. 2

Scholarly Excellence of the Program

F from Anova of program differences 8.60*	Reliability of program scale scores .88	Index of scale homogeneity .90

Item-item correlations of program mean scores	1	2	3	4	5	6
1. Program one of best in field (S-1-h)	--					
2. Students highly competent (S-1-n)	74	--				
3. Department stimulating place to study (S-1-t)	81	50	--			
4. Faculty scholarship or research excellence (S-2-1)	85	66	71	--		
5. Students demonstrate original ways of handling research (S-6-b)	53	60	56	48	--	
6. Students committed to pursuit of scholarship (S-6-k)	49	50	57	54	67	--
Item-scale score correlations of program mean scores	92	81	85	88	75	73

*p < .001 df = 72/2627

Student Scale No. 3

Satisfaction with Program

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
3.47*	.71	.87

Item-item correlations of program mean scores	1	2	3	4
1. If had chance, would transfer (reversed) (S-1-d)	--			
2. Good preparation for my later work (S-1-e)	62	--		
3. Would advise friend to attend here (S-1-k)	74	67	--	
4. I have learned a great deal (S-1-o)	63	67	67	--
Item-scale score correlations of program mean scores	89	83	90	83

*p < .001 df = 72/2632

Student Scale No. 4

Faculty Concern for Students

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
2.82*	.65	.80

Item-item correlations of program mean scores	1	2	3	4	5	6	7
1. Accessibility to students (S-2-a)	--						
2. Helpfulness in identifying financial aid (S-2-b)	15	--					
3. Concern for professional development (S-2-d)	54	35	--				
4. Guidance in selection of courses (S-2-e)	48	06	52	--			
5. Willingness to go out of way to help (S-2-f)	74	09	65	53	--		
6. Interest in students' welfare (S-2-1)	53	15	68	47	64	--	
7. Helpfulness in finding jobs after degree (S-2-m)	18	57	56	17	22	31	--
Item-scale score correlations of program mean scores	70	52	87	64	74	76	65

*p < .001 df = 72/2615

Student Scale No. 5

Rating of Curriculum

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
4.89*	.80	.80

Item-item correlations of program mean scores	1	2	3	4	5	6	7
1. Opportunities for courses in other fields (S-1-1)	--						
2. Opportunities for independent study (S-4-f)	32	--					
3. Flexibility to meet individual needs (S-4-g)	56	72	--				
4. Sequence of courses (S-4-h)	-04	00	10	--			
5. Breadth of course and prog. offerings (S-4-j)	17	28	41	39	--		
6. Depth of course and prog. offerings (S-4-k)	23	31	43	42	85	--	
7. Relations with related depts. in univ. (S-4-m)	42	23	46	32	50	58	--
Item-scale score correlations of program mean scores	58	63	81	42	75	79	74

*p < .001 df = 72/2640

Student Scale No. 6

Rating of Relevance of Degree Requirements

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
4.01*	.75	.72

Item-item correlations of program mean scores	1	2	3	4	5	6	7
1. Clarity of degree requirements (S-4-a)	--						
2. Relevance of admissions requirements (S-4-b)	53	--					
3. Agreement of degree reqts. and dept. objectives (S-4-c)	62	69	--				
4. Relevance of required courses in related fields (S-4-d)	31	34	46	--			
5. Appropriateness of language requirements (S-4-e)	04	04	17	06	--		
6. Fairness of qualifying exam administration (S-4-i)	31	33	62	46	23	--	
7. Relevance of requirements to work in field (S-4-1)	43	60	67	59	17	51	--
Item-scale score correlations of program mean scores	64	67	86	62	46	73	79

*p < .001 df = 72/2614

Student Scale No. 7

Quality of Teaching

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
3.80*	.74	.83

Item-item correlations of program mean scores	1	2	3	4	5	6	7
1. Many faculty do not prepare for courses (reversed) (S-1-s)	--						
2. Useful faculty criticism of my work (S-2-c)	34	--					
3. Helpfulness in dealing with classwork (S-2-g)	35	53	--				
4. Knowledge of the field (S-2-h)	32	38	-10	--			
5. Excitement for new ideas (S-2-j)	16	44	-09	73	--		
6. Quality of teaching (S-2-k)	72	62	53	35	34	--	
7. Appropriate teaching methods (S-2-n)	51	61	43	45	49	71	--
Item-scale score correlations of program mean scores	69	78	50	65	64	86	83

*p < .001 df = 72/2618

Student Scale No. 8

Quality of Students' Assistantship Experience

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
4.12*	.76	.77

Item-item correlations of program mean scores	1	2	3	4	5	6	7	8	9	10
1. Number available (S-5-a)	--									
2. Stipend (S-5-b)	51	--								
3. Lack of "dirty work" (S-5-c)	03	11	--							
4. Contribution to student academic development (S-5-d)	-08	15	72	--						
5. Chance to act as professional (S-5-e)	-20	12	58	87	--					
6. Relevance of work to professional duties (S-5-f)	-21	07	61	87	88	--				
7. Staff treatment of assistants as colleagues (S-5-g)	-03	07	50	65	67	63	--			
8. Fairness of administering assistantships (S-5-h)	71	43	30	16	09	07	30	--		
9. Supervision of assistantship holders (S-5-i)	30	34	49	40	31	35	42	61	--	
10. Office space and equipment (S-5-j)	38	43	-12	-05	-11	-13	17	35	28	--
Item-scale score correlations of program mean scores	48	60	62	70	62	60	66	67	69	46

*p < .001 df = 72/2072

Faculty Scale No. 1

Scholarly Excellence of the Program

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
10.50*	.90	.93

Item-item correlations of program mean scores	1	2	3	4	5
1. Intellectual environment in department (F-2-b)	--				
2. Scholarship of faculty (F-2-m)	87	--			
3. Scholarship and research ability of students (F-2-r)	68	77	--		
4. Students demonstrate originality (F-3-b)	66	69	85	--	
5. Student committed to pursuit of scholarship (F-3-k)	61	66	79	85	--
Item-scale score correlations of program mean scores	87	91	92	90	87

*p < .001 df = 72/1674

Faculty Scale No. 2

Compatibility of Work Environment

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
3.92*	.74	.77

Item-item correlations of program mean scores	1	2	3	4	5	6
1. Conflicting demands cause personal strain (reversed) (F-1-d)	--					
2. Seldom get time to give jobs sufficient attention (reversed) (F-1-g)	41	--				
3. Personal views compatible with department's (F-1-h)	22	26	--			
4. If had reasonable offer would move (reversed (F-1-i)	14	22	37	--		
5. Satisfied with opportunities to influence department's decisions (F-1-p)	24	33	72	47	--	
6. Personal relations among faculty in department (F-2-c)	08	15	63	49	66	--
Item-scale score correlations of program mean scores	43	49	79	69	85	81

*p < .001 df = 72/1678

Faculty Scale No. 3

Research Activity

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
5.85*	.83	.68

Item-item correlations of program mean scores	1	2	3	4	5
1. Research/writing award (F-8-e)	--				
2. Journal editor (F-8-i)	17	--			
3. Article referee (F-8-j)	25	32	--		
4. Institutional/departmental grant (F-8-k)	16	13	36	--	
5. Outside grant/contract (F-8-1)	32	22	70	28	--
Item-scale score correlations of program mean scores	52	51	82	59	82

*p < .001 df = 72/1679

Note: Scale for this item is average number of "yes" responses by faculty members in each program.

Faculty Scale No. 4

Rating of Student Commitment/Motivation

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
5.06*	.80	.89

Item-item correlations of program mean scores	1	2	3	4	5	6	7
1. Do a good deal of unassigned reading (F-3-d)	--						
2. Handle assignments with care (F-3-f)	75	--					
3. Easily distracted from studies (reversed) (F-3-h)	55	72	--				
4. Show enthusiasm for field in discussions (F-3-i)	82	79	58	--			
5. Work on projects to completion despite setbacks (F-3-n)	70	78	62	65	--		
6. Are dependent on faculty for direction (reversed) (F-3-p)	75	66	46	68	58	--	
7. Fail to complete major assignments on time (reversed) (F-3-q)	09	26	31	03	33	13	--
Item-scale score correlations of program mean scores	88	91	77	86	84	80	36

*p < .001 df = 72/1647

Faculty Scale No. 6

Adequacy of Evaluating Students

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
3.48*	.71	.87

Item-item correlations of program mean scores	1	2	3	4
1. Fairness with which degree requirements are administered (F-2-g)	--			
2. Department procedures for evaluating student progress (F-2-o)	67	--		
3. Department procedures for evaluating comprehensive exams (F-2-p)	58	69	--	
4. Department procedures for dissertation supervision and defense (F-2-q)	66	56	56	--
Item-scale score correlations of program mean scores	87	88	81	81

*p < .001 df = 72/1669

Alumni Scale No. 1

Satisfaction with Dissertation Experiences

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
1.85*	.46	.85

Item-item correlations of program mean scores	1	2	3	4	5	6	7	8	9	10	11
1. Dissertation research/course work integration (A-5-a)	--										
2. Selection of chairman and committee members (A-5-b)	26	--									
3. Freedom of student to select own topic (A-5-c)	20	48	--								
4. Generally expected scope of research problem (A-5-d)	28	48	49	--							
5. Arrangements for student/faculty interaction (A-5-e)	45	47	25	49	--						
6. Relationship between chairman, committee and candidate (A-5-f)	38	59	43	37	48	--					
7. Nature and timing of final oral examination (A-5-g)	41	31	13	09	23	33	--				
8. Quality of writing expected in final document (A-5-h)	35	18	17	33	38	17	35	--			
9. Opportunity for student's individual expression (A-5-i)	47	27	53	62	34	20	13	32	--		
10. Relevance to other professional skills (A-5-j)	19	38	48	41	32	32	03	11	44	--	
11. Relevance to student's career plans (A-5-k)	35	41	52	45	25	54	14	09	46	76	--
Item-scale score correlations of program mean scores	64	69	66	70	66	70	40	44	67	67	75

*p < .01 df 65/1165

Alumni Scale No. 2

Scholarly Excellence of Program

F from Anova of program differences	Reliability of program scale scores	Index of scale homogeneity
7.03*	.86	.92

Item-item correlations of program mean scores	1	2	3
1. Program one of best in field (A-1-c)	--		
2. Department was stimulating place to study (A-1-1)	82	--	
3. Scholarship research excellence of faculty (A-2-g)	86	77	--
Item-scale score correlations of program mean scores	96	91	94

*p < .001 df = 65/1169

APPENDIX G

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ASSESSMENT OF QUALITY IN DOCTORAL EDUCATION -- FACULTY QUESTIONNAIRE FEEDBACK 10:45:30 10/16/75 PAGE 1
UNIVERSITY OF [redacted] DEPARTMENT OF CHEMISTRY

A. FACULTY PERCEPTIONS OF DOCTORAL PROGRAM ACADEMIC ENVIRONMENT

			YOUR DEPT.		LARGER DEPTS.	SMALLER DEPTS.
NUMBER OF OBSERVATIONS			36		12	12
ITEMS AND ALTERNATIVES			FREQ	PERCENT	AVG. PERCENT	AVG. PERCENT
1		1-A. ACADEMIC DEMANDS VERY HEAVY				
	1	DISAGREE STRONGLY	0	0.0	3.51	5.09
	2	DISAGREE WITH RESERVATIONS	2	5.56	33.48	42.12
	3	AGREE WITH RESERVATIONS	18	50.00	49.14	43.72
	4	AGREE STRONGLY	14	38.89	12.64	6.35
		OTHER	2	5.56		
3		1-C. DIFFERENT PERSONALITIES AND POINTS OF VIEW ARE WELCOME				
	1	DISAGREE STRONGLY	0	0.0	3.19	4.01
	2	DISAGREE WITH RESERVATIONS	2	5.56	8.86	13.76
	3	AGREE WITH RESERVATIONS	15	41.67	39.55	40.40
	4	AGREE STRONGLY	18	50.00	46.76	40.15
		OTHER	1	2.78		
6		1-F. COMMON FOR STUDENTS TO BE EXPLOITED				
	1	DISAGREE STRONGLY	4	11.11	24.54	36.25
	2	DISAGREE WITH RESERVATIONS	16	44.44	39.38	28.97
	3	AGREE WITH RESERVATIONS	10	27.78	23.23	19.08
	4	AGREE STRONGLY	5	13.89	11.66	14.86
		OTHER	1	2.78		
10		1-J. FACULTY FEEL SECURE IN ACADEMIC FREEDOM				
	1	DISAGREE STRONGLY	1	2.78	3.38	3.22
	2	DISAGREE WITH RESERVATIONS	0	0.0	7.38	6.58
	3	AGREE WITH RESERVATIONS	10	27.78	25.27	33.40
	4	AGREE STRONGLY	24	66.67	63.00	56.31
		OTHER	1	2.78		
12		1-L. FACULTY APPLY KNOWLEDGE TO SOLVE SOCIAL PROBLEMS				
	1	DISAGREE STRONGLY	8	22.22	26.69	27.09
	2	DISAGREE WITH RESERVATIONS	22	61.11	43.31	45.63
	3	AGREE WITH RESERVATIONS	4	11.11	24.21	20.79
	4	AGREE STRONGLY	1	2.78	3.80	4.60
		OTHER	1	2.78		
15		1-O. EMPHASIS ON TRAINING TECHNICALLY COMPETENT CRAFTSMEN				
	1	DISAGREE STRONGLY	4	11.11	27.02	18.85
	2	DISAGREE WITH RESERVATIONS	22	61.11	42.11	35.93
	3	AGREE WITH RESERVATIONS	8	22.22	25.41	34.50
	4	AGREE STRONGLY	1	2.78	3.13	8.93
		OTHER	1	2.78		

G. FACULTY PROFESSIONAL INVOLVEMENT

	YOUR DEPT.		LARGER DEPTS.	SMALLER DEPTS.
NUMBER OF OBSERVATIONS	36		12	12
ITEMS AND ALTERNATIVES	FREQ	PERCENT	AVG. PERCENT	AVG. PERCENT
69 8-A. SITE VISIT TEAMS OR NATIONAL ADVISORY COUNCILS				
1 YES	10	27.78	37.70	23.03
2 NO	25	69.44	61.69	74.54
OTHER	1	2.78		
70 8-B. POSTDOCTORAL FELLOWSHIP				
1 YES	25	69.44	68.79	61.57
2 NO	10	27.78	30.98	38.15
OTHER	1	2.78		
75 8-G. NATIONAL PROFESSIONAL ASSOCIATION OFFICE HOLDER				
1 YES	15	41.67	37.18	27.42
2 NO	20	55.56	62.27	72.30
OTHER	1	2.78		
76 8-H. REGIONAL PROFESSIONAL ASSOCIATION OFFICE HOLDER				
1 YES	10	27.78	36.13	45.92
2 NO	25	69.44	63.42	53.81
OTHER	1	2.78		
77 8-I. JOURNAL EDITOR OR EDITORIAL BOARD MEMBER				
1 YES	11	30.56	38.69	19.93
2 NO	24	66.67	61.07	79.80
OTHER	1	2.78		
78 8-J. ARTICLE REFEREE IN LAST TWO YEARS				
1 YES	32	88.89	92.82	89.59
2 NO	3	8.33	6.95	10.13
OTHER	1	2.78		
79 8-K. CURRENT INSTITUTIONAL OR DEPARTMENT RESEARCH GRANT				
1 YES	28	77.78	53.56	53.52
2 NO	7	19.44	46.20	46.20
OTHER	1	2.78		
80 8-L. CURRENT EXTERNAL RESEARCH GRANT OR CONTRACT				
1 YES	29	80.56	80.25	54.70
2 NO	6	16.67	19.52	45.02
OTHER	1	2.78		

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Interpretive Guide for Questionnaire Feedback

Each department should receive at least two separate feedback reports--for student and faculty respondents--which are computer summaries of the responses of these groups to each item on the questionnaires they completed last spring. (Some departments will also receive a feedback report for their alumni. If your department has not received one of these, it is because not enough responses had been received from alumni of your department in time to process them.) A two-page table of contents for these summaries (with a page index) is provided for your convenience.

The first important thing to bring to your attention about the computer reports is that the item summaries are not in the same order in which the items appear on the questionnaire. Instead, the items are grouped according to general content similarity so that responses that deal with similar aspects of the department are together. On the student summary, for example, the first group of items that are reported are those that have to do with "Student Perceptions of Doctoral Program Academic Environment" (which includes a summary of student responses to questionnaire items 1-a, 1-b, 1-e, 1-g, etc.); the second group of items (beginning on page 4) have to do with "Student Perceptions of Interpersonal Environment and Overall Satisfaction" (which consists of questionnaire items 1-d, 1-i, 1-j, and 1-k); and so on. There are 11 such content categories for the student report (item groupings A through K), 15 for faculty, and 13 for the alumni. The actual questionnaire item number precedes each item stem on the report.

Note that the wording of the item stems have been abridged on the computer report. Because of this, it might be well to go over the report with the original questionnaire in hand, so that you have the complete and accurate wording of the questions. (An extra copy of the questionnaire is included with each report.)

Most of the summaries have three columns of numbers. (Exceptions are the reports for alumni in history and psychology departments. See comments under Alumni section below.) The first column consists of data for your own department, with these data based on the number of individuals noted at the top of the column (under the words "your dept."). The number and percent of individuals in your department who chose each response option are listed. The second and third columns are provided so that you can compare the responses of persons in your own department with those at other larger and smaller departments in the study in your particular discipline. The number of departments comprising each group is indicated under the column headings "larger depts." and "smaller depts." (The assignment of a particular department to the larger or smaller group was done by simply taking recent data regarding the number of Ph.D.'s produced by each department, rank-ordering the departments on the basis of those figures, and dividing at the median or middle point. The names of the specific departments making up the larger and smaller comparison groups, by discipline, are provided on the accompanying sheet.) Only percent figures are reported for the two comparison groups and, in both cases, these are averages of percents at the number of departments indicated in the column heading (usually 12 or 13).

In comparing your department's data with those of other departments, it is important to remember that the percentage figures refer to percent of those (students, faculty or alumni) who returned a useable questionnaire. Overall, the response rates across departments were quite high especially for students and faculty; that is, at most departments a very high percent of the students and faculty who were asked to complete questionnaires did so. But there were some exceptions to this general rule. The number of useable responses from each department are included with the list of departments in each comparison group.

A final comment is that the percent designated "other" on the summary sheets is simply the percent of respondents who omitted that particular item.

Besides these general interpretive guidelines, there are variations in the computer summaries for students, faculty, and alumni, that probably need to be clarified. A specific discussion of each of these follows.

Student summary. As with the other reports, most percents in the student summaries refer to percent of students completing the questionnaire (that is, the number listed under the words "your dept." at the top of the first column). However, there is an important exception to this general rule, namely the student ratings of departmental assistantships (Section H on page 20 of the student summaries). Because only students who held an assistantship (teaching or research) at one time during their graduate student experience were asked to complete this section, percentages are based on the number of persons who answered each item rather than the total number of questionnaire respondents.

Faculty summary. As with the other summaries, most responses to the faculty questionnaire are reported in percents based on the total number of respondents in each program. Two exceptions on the faculty summary, however, pertain to Sections M and N on page 22. For these items, the mean (arithmetic average) number of publications (in M) and mean number of hours per week spent on various activities (in N) are reported. (Numbers under the "SD" column refer to the standard deviation of the same numbers. The standard deviation is a statistical expression having to do with the range of observations--in this case, publications and time spent--and does not need to be considered in any detail here.) The index of annual productivity of articles and book reviews (item 9-A-1 & 2 under Section M) was obtained by taking each respondents' entire career articles, book chapters, and reviews (as reported in items 9-A-1 and 9-A-2) and dividing by the number of years since that individual obtained his or her highest degree (which in the great majority of cases, of course, was the doctorate).

One other section of the faculty summary that is somewhat different than the other sections is Section O, on pages 23-25, having to do with colleague ratings of your doctoral program. First, it should be noted that overall ratings of your department (items 25-A and 25-B) are provided for both your own faculty and those at other departments, but ratings of your departments' specific fields of specialization (pages 24 and 25) are provided only for faculty from the other institutions in the study. The second way in which the data in this section differ from the rest of the faculty summary, is that the percents in Section O are based on individual faculty members rather than being the average of the percents across the dozen or so departments in the larger or smaller category. And finally, the number and percents for each specialization rating represent only responses by faculty at other institutions who indicated the same area of specialization as the one they were rating. (See item 26 on page 9 of the faculty questionnaire for clarification.) Thus, these percents were computed on a varying number of faculty members, that number being the one on the line labeled "total in specialization who responded."

Alumni summary. Two important points need to be made about this summary, both having to do with the fact that many fewer questionnaires were returned from alumni than was the case for faculty or current students. First, you may not have received a summary for your department's alumni at all. Alumni summaries were not run for those departments with fewer than 10 returned alumni questionnaires by the time these materials needed to be processed. (In cases where late returns have very recently boosted the number responding to more than 10, we will send alumni summaries at a later date.) Second, the comparison data for the alumni summaries is different in two respects. One is that only departments with more than 10 alumni respondents were included in comparison groups (see comparison group sheets). Therefore, a smaller number of departments are included in the larger and smaller comparison groups for chemistry. The other difference is that for history and psychology large and small departments have been combined into one comparison group since only 13 history and 14 psychology departments had sufficient returns.

General Information and Next Steps

We hope that you will find these departmental summaries interesting and useful. They represent the first step in the data analysis and report-writing phase of the project. During the next several months we shall be sifting, sorting, and exploring these data in a variety of ways as we search for a better understanding of the complex relationship between the reputation of an academic department as perceived by those outside of the department on the basis of the visibility of the faculty, level of research productivity, and the like, and the inner life of the department (faculty morale, level and frequency of student-faculty interactions, and so on). The final report should be completed by early 1976, at which time we shall send a summary to you.

Uppermost in our minds during this process will be the joint questions of feasibility and utility. That is, no matter what the results of our data-analysis phase of the project, we must ultimately ask how useful such information will be to those involved in graduate education--particularly at the department level--and how feasible is it to consider the collection and analysis of such information on a recurring basis. In order to answer these questions we will be imposing on some of you just one more time during the next few weeks. Either by phone or direct personal visit, we would like to ask some of you to give us your reactions to the questions posed above regarding the feasibility of the procedure your department has taken part in, and the utility of the resulting information.

In the meantime, if you should have any questions that cannot be answered by your institutional coordinator in the graduate dean's office, or if you have any comments or criticisms about the project in general, do not hesitate to contact us by phone or mail.

Drs. Mary Jo Clark (Project Director), Rodney T. Hartnett, or
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Princeton, New Jersey 08540

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October 1975

CGS/ETS Graduate Department Study

Comparison Groups for CHEMISTRY

	Number of Respondents		
Larger Departments	Faculty	Student	Alumni
Univ. of Calif. at Berkeley	38	90	11
Univ. of Calif. at Los Angeles	26	46	23
Univ. of Colorado	24	35	--
Florida State Univ.	26	31	23
Indiana Univ.	21	52	17
Univ. of Maryland	24	35	11
Univ. of Michigan	18	22	20
Univ. of Minnesota	22	23	10
Northwestern Univ.	26	46	32
Princeton Univ.	20	35	23
Stanford Univ.	16	44	25
Univ. of Wisconsin	36	104	66
Smaller Departments			
Boston College	12	6	--
Univ. of Calif. at Davis	21	16	20
Emory Univ.	11	21	--
Univ. of Iowa	18	27	23
Univ. of Kansas	20	15	19
Louisiana State Univ.	30	23	24
Univ. of Missouri	16	11	10
New York Univ.	17	26	15
Oklahoma State Univ.	17	27	12
Univ. of Toledo	8	8	--
Univ. of Utah	24	34	12
West Virginia Univ.	20	14	11

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CGS/ETS Graduate Department Study

Comparison Groups for HISTORY

	Number of Respondents		
Larger Departments	Faculty	Student	Alumni
Univ. of Calif. at Berkeley	30	52	--
Univ. of Calif. at Los Angeles	38	72	27
Univ. of Colorado	23	14	--
Indiana Univ.	28	53	30
Univ. of Michigan	29	65	26
Univ. of Minnesota	36	38	12
Univ. of Missouri	18	31	18
New York Univ.	16	58	30
Northwestern Univ.	18	36	19
Princeton Univ.	37	25	18
Stanford Univ.	24	45	25
Univ. of Wisconsin	33	124	40
Smaller Departments			
Boston College	10	9	--
Univ. of Calif at Davis	27	29	--
Emory Univ.	16	16	--
Florida State Univ.	25	23	--
Univ. of Iowa	22	34	11
Univ. of Kansas	30	22	14
Louisiana State Univ.	19	23	--
Univ. of Maryland	29	37	11
Oklahoma State Univ.	14	21	--
Univ. of Pennsylvania	15	19	--
Univ. of Toledo	10	11	--
Univ. of Utah	19	27	--
West Virginia Univ.	18	9	--

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CGS/ETS Graduate Department Study

Comparison Groups for PSYCHOLOGY

	Number of Respondents		
Larger Departments	Faculty	Student	Alumni
Univ. of Calif. at Berkeley	16	19	11
Univ. of Calif. at Los Angeles	41	30	30
Univ. of Colorado	34	82	--
Florida State Univ.	39	74	33
Univ. of Iowa	26	43	25
Univ. of Kansas	32	47	--
Univ. of Michigan	61	33	35
Univ. of Minnesota	59	202	20
Univ. of Missouri	17	26	19
New York Univ.	18	93	22
Stanford Univ.	22	34	33
Univ. of Wisconsin	22	48	17
Smaller Departments			
Boston College	15	12	--
Univ. of Calif. at Davis	17	11	--
Emory Univ.	18	22	--
Indiana Univ.	20	23	--
Louisiana State Univ.	18	24	17
Univ. of Maryland	32	37	17
Northwestern Univ.	15	15	15
Oklahoma State Univ.	9	17	--
Univ. of Pennsylvania	16	23	--
Univ. of Toledo	11	6	--
Univ. of Utah	21	28	13
West Virginia Univ.	19	18	--

October 1975